AfAS Newsletter

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Message from the President

It has been over a year since AfAS was relaunched in South Africa at the Astronomy in Africa meeting and a new Executive Committee was elected. The society has achieved several milestones and now has a fully operational office thanks to the hard work of the Executive Committee, the South African Department of Science and Innovation (DSI) and the Office for Astronomy for Development (OAD).

During these last few months, our lives have been severely disrupted, we have faced great hardship and uncertainty because of the novel Coronavirus disease of 2019 (COVID-19). The AfAS inaugural conference (AfAS2020) has been postponed to 8 - 11 March 2021 due to this outbreak. This difficult decision of the AfAS Executive Committee to postpone the conference to a later date was taken out of concern for the safety and well-being of the participants. The Executive Committee and the Local Organizing Committee have commenced early preparations for the meeting next year and details will be published in due course. The assumption is that international travel restrictions will be lifted by all countries and that the pandemic has subsided sufficiently to allow for large gatherings. However, it is anticipated that the number of attendees will be restricted due reduce risks of further transmission of the virus.

Many changes are currently underway at AfAS, our strategy is guided by our long-term vision and efforts of the various sub-committees. The office of the Secretariat has been established and earlier this year we announced that the Society has been entrusted with the responsibility to provide management/ organisational oversight for Pan-African astronomy initiatives, including the African Planetarium Association (APA), the African-European Radio Astronomy Program (AERAP), and African Science Stars. AfAS is well on its way to becoming a remarkable institution with a unique history as well as a deep commitment to excellence, achievement, and impact. In line with the vision of being the voice of astronomy in Africa and to contribute to addressing the challenges faced by Africa through the promotion and advancement of astronomy, AfAS supported an Extraordinary Call for COVID-19 related proposals led by the OAD.

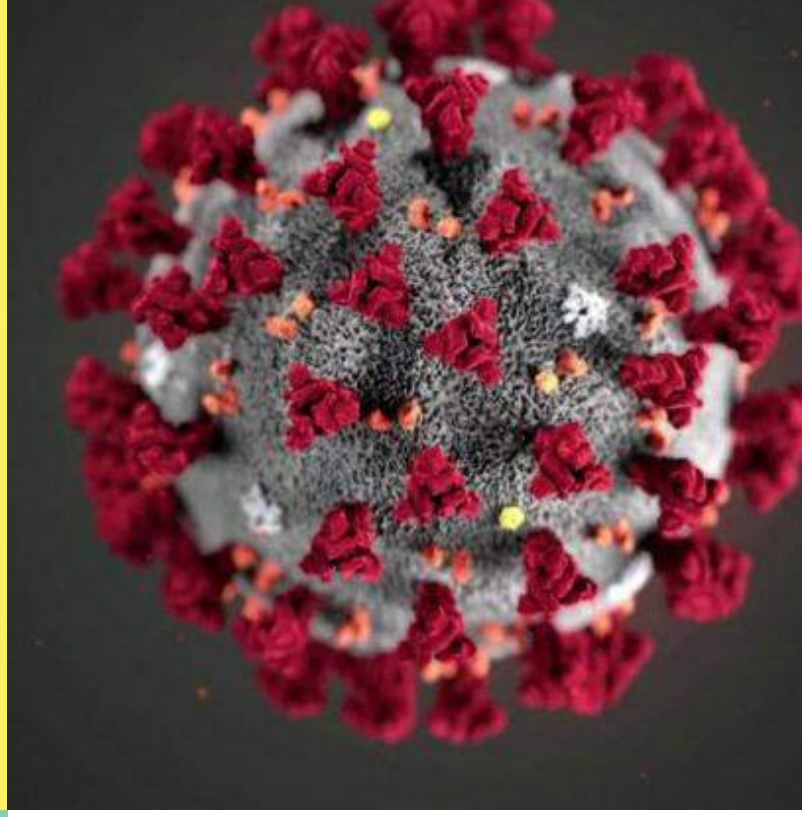
AfAS looks forward to working with the members of the Society and the astronomy community in the years ahead. We appreciate your continued support and would like to take this opportunity to wish all our colleagues and fellow astronomers good health and safe living during these uncertain times.

AfAS President:

J. Mimouni

AfAS African Astronomical Society

AfAS Support of the OAD Extraordinary Call for COVID-1 related Proposals



Covid-19 has had a significant impact on health systems, the world economy, food security, education, mobility, and communities. The current situation requires response through various interventions and in recognition of this, the International Astronomical Union/National Research Foundation Office of Astronomy for Development (OAD) released an extraordinary, fast-tracked call for proposals for projects (or partnerships) that in some way use astronomy, in any of its aspects (including skills, methodologies, tools, infrastructure, inspiration or even just networks of astronomers/enthusiasts themselves) to help reduce some of the negative effects of the pandemic. Three astronomy organizations - OAD, AfAS, and APA - have come together to fund small projects to enable communities to overcome some of the effects of COVID-19. A total of 43 projects were selected and granted a sum of 804,443 ZAR (approximately €40 000).

A list of all projects funded under this call can be found at: http://www.astro4dev.org/results-of-extraordinary-call-for-covid-19-related-proposals/

A list of proposals that were reviewed but not funded can be viewed at: http://www.astro4dev.org/other-proposals-submitted-to-covid-19-extraordinary-call/

The AfAS Executive Committee is happy to announce that we have supported five of the proposals received by the OAD as part of our Covid-19 response, to a sum of 100,886 ZAR (approximately €5,000), this is in line with the vision of AfAS to be the voice of astronomy in Africa while contributing to addressing the challenges faced by Africa through the promotion and advancement of astronomy. The funded projects include those using astronomy in remote teaching and learning programs to continue engaging students during school closures, providing follow-up capacity building for teachers involved in Refugee camps, engaging elementary and high school children through Art, providing the families of students with hygienic supplies, while also including educational, astronomy-based material for the children and their families to enjoy while at home, and acquisition of recyclable personal protection equipment and handwash for laboratory activities and awareness sessions. The funded projects are based in Tanzania, Algeria, Nigeria, Burkina Faso, and South Africa.

Annular Solar Eclipse 2020 – under the shadow of a pandemic

There are few occasions when humanity can gather together in awe of nature, and solar eclipses are one of them. The annular solar eclipse on the morning of 21 July 2020 was visible across large parts of Africa, with the annular path cutting across central and eastern Africa. This particular eclipse posed a challenge to outreach and education communities worldwide, including our continent. How does one organise an eclipse campaign when everyone is confined to their homes due to the COVID-19 pandemic, and schools are closed? The Outreach Committee of AfAS decided to face this challenge by forming a pan-African network of outreach professionals and supporting their work in various ways.

We started by forming a common platform of outreach practitioners in the countries where the eclipse was visible. This platform was effective in uniting the efforts of individual groups, identify common needs, and sharing ideas and content. The Outreach Committee took on the role of creating resource material on the eclipse. We brought out a detailed handbook as well as a set of seven posters, all beautifully designed by Africa Science Stars. We worked with the Astronomical Society of India to adapt their eclipse android app for Africa. Our collaborators translated the entire handbook and the app into Amharic and Kiswahili as well. Astronomers Without Border worked with this platform to successfully send a shipment of eclipse glasses to Ethiopia in the middle of the pandemic. Many initiatives of local groups, like the eclipse song from Kenya, achieved publicity around the world. All of our resources were licensed through a Creative Commons license and were made freely available.

The entire campaign was tied together through a set of comprehensive webpages on the AfAS website and regular posts on AfAS social media. In particular, we collaborated with the IAU OAO to maintain a detailed list of live eclipse webcasts from around the world, which was used globally as a resource list. In addition, we collaborated with groups from Ethiopia, Kenya and Tanzania in their live broadcasts during the eclipse, which were seen from around the world. We are compiling a detailed report on our work as well.

Our resource material was on the nature of eclipses and their phenomenology, locations and timings, eye safety and safe methods of viewing the eclipse, and online resources, all of which are the usual topics. However, due to the lockdown, we could neither facilitate nor rely on public gatherings where people could see the eclipse safely, and together. Hence, our emphasis was on describing various simple non-telescopic methods by which everyone could see the eclipse from their homes and neighbourhoods, using material that are easily available. In line with the IAU OAO's campaign of #AstroAtHome, this eclipse was a call to re-imagine a public science campaign without public gatherings. Many of the projects we have initiated since the eclipse are also similarly constrained, and therein lies our collective challenge!

Figure 1: Annular Solar Eclipse 2020 – under the shadow of a pandemic – Credit: Niruj Mohan Ramanujam

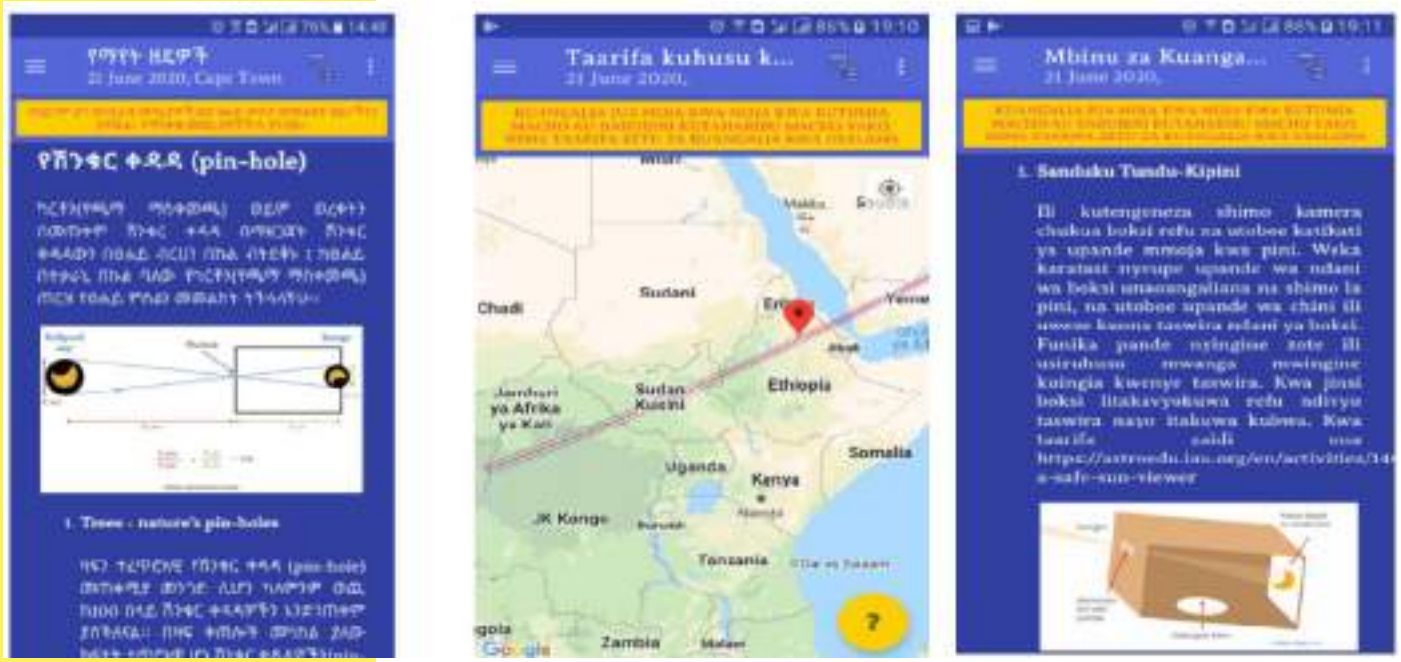


Figure 2: Screenshots of the android app on the Annular Solar Eclipse of 21 July, in English, Amharic and Kiswahili - Credit: Niruj Mohan Ramanujam

Figure 3: The eclipse from Lalibela, Ethiopia, which was on the path of annularity (credit: ESSTI & ESSSI)

Postponement of the AfAS Conference due to Covid-19

The AfAS Executive Committee (EC) decided to postpone the inaugural conference of the African Astronomical Society (AfAS2020) that was scheduled for the 16th- 17th of March 2020 as a result of the Covid-19 outbreak. The decision to postpone the conference arose from the need to protect the well-being of the attendees as well as the community at large. The AfAS EC apologises for any inconvenience caused by the postponement and has set a new date for the conference of the 8th -11th of March 2021. We are optimistic that the conference can be held in South Africa although with reduced number of attendees to minimize any further risks of transmission of the virus.

For more information, please contact the AfAS office at admin@africanastronomicalsociety.org.

Prof.J.Mimouni is one of the two recipients of the EUREKA Prize At the Award Ceremony on February 27, 2020 at Tunis

The third edition of the "EUREKA" prize for the promotion of education and of scientific popularization, was awarded for the year 2019 to the two researchers, Jamal Mimouni, of Algerian nationality, and François Taddei, of French nationality. It took place at the Cité des Sciences in Tunis on Thursday February 27, in partnership between the «Cité des Sciences» (CST)itself, the Professional Network of Scientific Technical and Industrial Cultures (AMCSTI, France), and the "Med 21" program.

These laureates were chosen by a commission created in 2017, for their efforts in the field of the dissemination of scientific culture and the popularization of science in the countries of the Mediterranean basin.


AfAS
African Astronomical Society
SAVE THE DATE
Conference of the African Astronomical Society
AfAS
2021
8 - 11 March 2021
Cape Town
South Africa

GHOU FIRST Africa Regional Conference and GTTP Workshop

The Global Hands-On Universe (GHOU) FIRST Africa Regional Conference and the International Teacher Training Workshop (GTTP) took place from 24 to 29 September 2019 in Ifrane-Morocco. Training during the GTTP workshop included Asteroids Search, Moon craters and black holes, Planetary Software (e.g. Stellarium, Celestia, Worldwide Telescopes, Google Earth), and Hands-on class activities. Those two workshops were masterly conducted by the Astronomical Club of Ifrane University in coordination with other astronomical instances.

AfAS was a partner for the GHOU conference and GTTP Workshop. The AfAS President, Prof. Jamal Mimouni gave a lecture on the occasion. He also participated as the honorary guest to the 8th edition of Ifrane's Astronomy Festival which was taking place in parallel to the GHOU and GTTP workshops and delivered the Presidential address at the Ifrane Cultural Center auditorium in center city. Other speakers included Zouhair Benkhaldoun (President of the Arab Astronomical Society) (AAS) and Hassane Darhmaoui (Director of the Astronomy Festival of Ifrane).

The 17th National Festival in Popular Astronomy

The 17th National Festival in Popular Astronomy was hosted by the Sirius Astronomy Association under the theme "Under One Sky" in line with the IAU100 celebrations. The Festival was held from 03 to 05 October 2019 in Constantine, Algeria, and aimed to:

1. Spread the culture of astronomy, and concomitantly the culture of science;
2. Provide thematic training for Amateur Astronomers/EPO Individuals;
3. Kindle/Strengthen continental links between astronomy associations and participating individuals;
4. Engage in joint education and outreach projects.

Figure 4: One of many workshops which took place during the 17th festival – Credit: Mimouni

Figure 5: Left- Rajaonarivelo Andoniaina (successful proposer of a talk and exhibition at the 17th National festival in Popular Astronomy. Right – Jamal Mimouni (President of AfAS) – Credit: Mimouni

AfAS issued a call for proposals under the theme "Building a bridge across Africa" for a Pan-African contest for Amateur Astronomers/Education Public Outreach Individuals aligned to the vision of AfAS to create a globally competitive and collaborative astronomy community in Africa. The society sponsored the attendance of Mr. Rajaonarivelo Andoniaina from Madagascar to the 17th National Festival in Popular Astronomy where he presented a talk and displayed an exhibition on astronomy outreach activities for the public that he conducts in his home country. Mr. Rajaonarivelo Andoniaina shares his experience below:

"Under one sky",the slogan of IAU for its 100 years, was also the main theme of the 17th National Festival of Popular Astronomy of Algeria held from October 3 to 5, 2019 in Constantine. Three days of learning, and exchange through exhibitions and conferences.

October 3: Opening ceremony, with the speech of the authorities, members of the Sirius Association, and guests, including me, where we talked about our feelings about the festival. The exhibition began in the morning, I had a stand where I presented my association "Haikintana" and where I presented an exhibition on our outreach activities of astronomy in Madagascar.

October 4: Second day of festival, the exhibition continues, it was also the day of my presentation, where I spoke about our outreach activities in Madagascar and about stargazing which is our principal activity.

October 5: Last day of the festival, the exhibition has ended in the morning, the closing ceremony was in the afternoon, where I gave the same presentation but to a larger public. I received my certificate and a gift from Sirius Association for my contribution and my participation.

This festival was very informative because I was able to learn new things in different areas around amateur astronomy such as astrophotography and the astronomy outreach activities for the general public who are very hospitable too. I could also share my passion and make my country known through astronomy.

Andoniaina Rajaonarivelo

Figure 6: Rajaonarivelo Andoniaina with participants visiting his exhibition -Credit Rajaonarivelo

Figure 7: Rajaonarivelo Andoniaina delivering his presentation -Credit Rajaonarivelo

Figure 8: The closing ceremony of the 17th Astronomy Festival at Constantine -Credit: Mimouni

Another Successful WAISSYA Program!

The Fourth West African International Summer School for Young Astronomers (WAISSYA) program was successfully completed from October 28th to November 1st, 2019. Undergraduate and graduate students from across Africa gathered for one week at the National Space Research and Development Agency (NASRDA) in Abuja, Nigeria. The course immediately followed a week-long workshop for instructors.

The aims of WAISSYA are to contribute to building a critical mass of astronomers and a community of future scientific leaders in West Africa, and to exchange ideas about teaching and learning across continents. In operation since 2013, what makes the program unique is its emphasis on innovative teaching methods, practical activities using real astronomical data, discussion, teamwork and brainstorming within groups.

An international team of instructors from Africa, North America, and Europe brought their experience in astronomy, cosmology, space science, instrumentation and science communication to inspire the next generation of African astronomers. During the instructor's week held prior to the main program, they collaborated on designing interactive teaching activities for students and held discussions about what makes effective teaching and what teaching challenges and strengths they face in their different contexts.

Figure 9: Part of the WAISSYA Instructors Team – Credit: WAISSYA

During the school, students in the undergraduate stream learned scientific thinking via an inquiry-based activity where teams of students designed and conducted themselves a scientific investigation about the distance to an astronomical object. They also participated in interactive lessons about stars, exoplanets, galaxies, radio astronomy & instrumentation and cosmology, as well as discussions about career paths in STEMI. Another highlight was the group teaching project, where student teams designed an astronomy outreach activity to bring back to their home communities.




Figure 11: Outreach at local schools – Credit: Sarah A. Masters

Students in the graduate stream learned the basics of UNIX and Python. They were taken through how to inspect, process and visualize astronomical data. Among other practical sessions, they also learned to schedule optical observations on the Las Cumbres Observatory (LCO) Global Telescope Network and were able to obtain time series data on variable stars, process it using Python and then determine the type of variable stars they observed.


Figure 12: Undergraduate stream students – Credit: WAISSYA

Figure 13: Graduate stream students at work- Credit: WAISSYA

Additional highlights from this year included a Women in Science lunch, a project on how to communicate astronomy ideas to the public, night-sky observing, and a discussion on the future of astronomy in Africa with Director of the Office of Astronomy for Development, Kevin Govender.

The WAISSYA students were overwhelmingly positive about the program, appreciating the innovative teaching methods and activities that enabled them to work through challenges with their peers. Their enthusiasm and energy give hope that the future of astronomy in West Africa and Africa as a whole, is brighter.

Figure 14: A group photo after the opening ceremony - WAISSYA

To learn more about WAISSYA visit https://www.astrowestafrica.org/ or send an email to waissyacollaboration@gmail.com

TRANSIT OF MERCURY 2019 AN AFRICA-WIDE CAMPAIGN

On 11th November 2019, a Transit of Mercury took place. This rare astronomical phenomenon, when the planet Mercury can be seen moving across the face of the Sun, was visible from all of Africa and hence presented a great opportunity for outreach events across the continent.

The SAAO and partner organisations such as SARAO, OAD, SAASTEC, AfAS, DARA and others worked together to create an Africa-wide campaign. The aim was to publicise the Transit throughout Africa and encourage individuals or groups with small telescopes to organise public events so that as many members of the public as possible would have the opportunity to view this wonderful celestial phenomenon.

To encourage participation, resources were made available online via several websites which could be downloaded free, namely a comprehensive handbook (adapted from an earlier handbook by the Astronomical Society of India for the 2016 transit) and an eye-catching poster. Most importantly, the resources explained clearly and effectively how to view the Transit safely using the projection method. Events could be registered via a Google Form, and then displayed online on an interactive map via the OAD (see below).

Figure 15: Map showing distribution of registered events. Credit: IAU astro4dev

22 events were registered; 8 in South Africa, 2 each in Ethiopia and Algeria, the others in Morocco, Nigeria, Ghana, Kenya, Mozambique, Madagascar, Togo, Sudan, Mauritius and Sao Tome. These were organised by a mixture of astronomy observatories, science centres and amateur astronomy clubs.

It should be noted that other organisations were also promoting the Transit globally. For example, Astronomers Without Borders registered several events worldwide including 3 in Africa; Ghana, Zimbabwe and Morocco.

On the day of the Transit, countries in southern Africa were mainly clouded out but Ghana, Algeria, Morocco, Sudan and others were able to see the Transit. Visitors of all ages were excited to witness the workings of our Solar System for themselves.

Even where the transit could not be viewed, organisers took the opportunity to speak to the public about astronomy in general or view the transit via a live webcast.

The Mercury Transit of November 2019 showed that organisations can work together to create a campaign that can inspire and motivate the public across the African continent.

A glimpse of Mercury between the clouds at Senekal, SA. Credit: Wessel du Preez

A successful Transit celebration with students at Omdurman Islamic University in Omdurman, Sudan. Credit: Tamador Khalil

All ages viewing the Transit in Marrakech, Morocco. Credit: Benkhaldoun Zouhair

Transit viewing at the South African Department of Science and Innovation

Acronyms:

SAAO: South African Astronomical Observatory
SARAO: South African Radio Astronomy Observatory
AfAS: African Astronomical Society
OAD: Office of Astronomy for Development
DARA: Development in Africa with Radio Astronomy
SAASTEC: Southern African Association of Science and Technology Centres

Astronomy in Africa Science Business Meeting

Figure 16: Astronomy in Africa Science-Business meeting attendees – Credit: Randriamanakoto

Senior astronomers and representatives of African Countries held a meeting in Addis Ababa, Ethiopia, on 10 and 11 October 2019, to deliberate on the Science strategy of the AfAS Science Committee. The meeting was led by the AfAS Science Committee and focus on the business of AfAS, the role of AfAS as far as the science is concerned, featured discussions on the science goals for AfAS.

The Astronomy in Africa science business meeting was hosted alongside the IAU356 symposium in Ethiopia on 'Nuclear Activity in Galaxies Across Cosmic Time' which took place from 7-11 October 2019. This created a platform to foster partnerships and collaborations with international scientific bodies as well as participants of the IAU356 symposium. Both meetings took place at the Jupiter. International Hotel in Addis Ababa, Ethiopia. The Ethiopian Space Science and Technology Institute (ESSTI) hosted the meeting and the African Astronomical Society (AfAS), the East Africa Regional office of Astronomy for Development (EA-ROAD), Ethiopian Space Science Society (ESSS) and the Ministry of innovation and Technology (MiNT) were co-organisers.

The Astronomy in Africa Science Business meeting took note of the presentation on the status and vision of AfAS, which also proposed discussion points for the AfAS Science Strategy and acknowledged the good progress made by AfAS since the Astronomy in Africa meeting held in Cape Town, South Africa back in March 2019. The meeting discussed the mandate of the Science Committee and initiatives that AfAS can undertake to empower early career researchers and took stock of existing activities and research interests of the ten African countries that were represented at the meeting. These discussions led to the development of the draft: vision, mission and objectives of the Science Strategy of the AfAS Science Committee.




The combined, IAU 356 Symposium and Astronomy in Africa Science Business meeting lunch session took note of the word of encouragement from the European Astronomical Society (EAS) and the presentation on the current status of astronomy in Africa. AfAS presented the first draft of the Science Strategy of the AfAS Science Committee to the IAU 356 Symposium for input.

Summary of the draft AfAS Strategy that was developed at the Astronomy in Africa science business meeting:

VISION

An interlinked and world class African astronomy community contributing to the advancement of human knowledge.

MISSION

To advance astronomy through the development of strategies, facilitation of interdisciplinary collaborations, encouragement of cross border engagements, and stimulation of human capital development.

- **Action: establish experienced and representative science committee.**

Objectives

1. To support the development and sharing of national strategies
2. To advance Astronomical Science and Technologies
   - **Science Collaborations and research exchanges e.g. joint research proposals**
   - **Recognition of Excellence prizes, etc**
   - **Nurturing early career researchers**
   - **Exchange of knowledge through meetings and publications**
   - **Databases of astronomy expertise, active research areas, infrastructures across Africa and African diaspora**
   - **Develop and/or disseminate (open source) resources which will benefit astronomy**
3. **Human Capital Development**
   - **Teaching and research** - universities starting/expanding astronomy teaching
   - **Training opportunities and scholarships**: academic writing, schools, DARA, SKA, etc
   - Improving **quality** of trainings e.g. symposia, workshops, etc
   - Collaborations on Joint supervision, twinning
   - **Outreach** to help science and science to help outreach
4. **International and national engagements**
   - **Connect African community to international initiatives**
   - **Lobbying/interacting with the AU, ASA, national science agencies and others to support astrono my research and training**
   - **Infrastructure support e.g. site testing optical, radio astronomy and dish conversion, high energy, AVN, EHT...**
5. Facilitate **interdisciplinary collaborations** e.g. between modern and indigenous astronomy.

Astronomy in Africa Science Business Abstracts

Abstract Summaries & Introduction

By S. MKHIZE

The Astronomy in Africa Science Business meeting held in Addis Ababa, Ethiopia in October over the two days 10th & 11th attracted a number of professional astronomers, educators as well as science writers from the diaspora and Internationally. This being the second meeting of the African Astronomical Society AfAS also coincided with the International Astronomical Union Symposium 356 on; Nuclear Activity in Galaxies across cosmic time from the 7th – 11th October. The two meetings were held in opposite conference rooms of Jupiter Hotel (The main conference accommodation), in the Kazanchis area of Addis allowing for participants to drop in on various sessions as well as for corridor talk during the coffee breaks.

Urban Astronomy in Addis – Sukuma Mkhize, University of Western Cape

This talk examines the role that astronomy images play in creating awareness of the latest developments in both technical and cultural aspects within any astronomy community. The argument presented is that emphasis on the astronomy image within the urban context can be used to further promote scientific work both in parallel and as a driver for social developments resulting from a growing astronomy community.

I.P as Driver of Social & Economic Development in Africa – Naftali Kimani, Kenyatta University

Knowledge generation in the physical sciences leads to technological innovation and patenting. Gaining a good handle on Intellectual Property with each journal publication and scientific contribution is paramount in ensuring that the scientific activities within a state and those of growing astronomy community further lead to both social & economic development is the main argument presented by Naftali.

The Role of the Media in Astronomy – Joseph Ibeh, Space in Africa

Building from the successes of the Space in Africa magazine & publication, Ibeh provides some invaluable past lessons and pointers for both AfAS and ESSTI in which good writing accompanied by images in print social media can help further enhance the activities that are taking shape within Ethiopian Astronomy.

Challenges of Postgraduate Training in Astrophysics – Dr. Noorali Jiwaji, Open University of Tanzania

What can be learnt from the past successes and failures in related postgraduate training programs in Astronomy? This talk presents a novel approach in postgraduate training in astronomy, part of a collaboration between the Open University of Tanzania & the Astronomy and Space Association of Tanzania (ASSAT) which aims to adopt the merits of existing programs such the National Astrophysics and Space Science Program NASSP while avoiding some of the inherent pedagogies which have proven to be unsuccessful over the years.

The Current State of Astronomy in Uganda– Jurua Edward, Mbara University of Uganda

This talk provides a synopsis of the state of astronomy in Uganda and highlights some of the curriculum adjustments that have taken shape towards promoting astronomy as a subject both in the schooling and tertiary education levels in Uganda.

Report on the IAUS 356 in Ethiopia and related activities

The IAU 356 symposium is the third IAU symposium held in Africa in the past 100 years of the IAU. The symposium corroborates the fact that many African countries are making rapid progress in astronomical studies and space science for socio-economic growth. The symposium aimed to contribute to the development of astronomy in Ethiopia and Africa in general. The major technical goal of the symposium was to provide a general overview of recent findings and progress in observations, simulations, and theory of Active galactic nuclei (AGN) from the local universe up to high redshifts. A detailed report from the organisers on this symposium follows:

Dear colleagues,

We would like to share with you a brief summary on the IAU 356 symposium on 'Nuclear Activity in Galaxies Across Cosmic Time' that was held in Addis Ababa, Ethiopia, from 7 - 11 of October 2019. This was the third symposium organised in Africa in the past 100 years since the establishment of the IAU, and only the first one organised in Ethiopia and East-Africa. For benefiting the broader public, different activities have been carried out for graduate students, young researchers, teachers, teachers' trainers, school children, and general public, before, after, and during the symposium.

IAUS 356 (7 - 11 Oct)

(http://iau356.essti.gov.et)

The aim of this symposium was: on one side to improve our understanding about nuclear activity in galaxies across cosmic time, and on the other to contribute to strengthen the development of science in Ethiopia and Africa for the benefit of all. We had a very productive scientific meeting that focused the discussion around 7 topics related with: S1. Multiwavelength AGN surveys, S2. AGN types and unification model, S3. Variability, S4. Properties of AGN host galaxies, S5. Triggering, feedback, and shutting off of AGN activity, S6. Jets and environment, and S7. The youngest AGN and AGN evolution.

Symposium was opened by the Minister of Innovation and Technology Dr. Getahun Mekuria, Former Deputy Prime Minister Mr. Tefera Waluwa, ESSTI General Director Dr. Solomon B. Tessema, African Astronomical Society Vice-President Dr. Lerothodi Leeuw, East-African ROAD Director Mr. Alemiye Mamo, and IAUS SOC and LOC chair Dr. Mirjana Pović. All of them recognised the IAUS 356 to be an important event for astronomy and science development in Ethiopia and Africa.

Independently on many challenges that were there in organisning this symposium, we believe that we managed to have at the end very successful meeting and to achieve some of the main objectives, such as:

- revise the current status of physics behind AGN and still open questions,
- give more visibility to the ESSTI, and astronomy development in Ethiopia and Africa,

- inspire and motivate our first generation of MSc and PhD students in Ethiopia and Africa,
- bring for the very first time the international scientific community from the field to Africa and involve them in different activities for benefiting scientific and broader community (see below for more details on different activities),
- strengthen the current international collaborations and open a new space of possible collaborations between Africa and the rest of the world.

Basic statistics

- Number of participants: 164
- Number of represented countries: 30 (from 5 continents)
- Invited talks: 7 (4 males, 3 females; 7 countries, 5 continents)
- Contributed talks: 60 (53% male speakers, 47% female speakers)
- Poster presentations: AGN field - 33, non-AGN field – 17
- Number of discussion sessions: 8
- Discussion sessions chairs: 8 (5 males, 3 females)
- Session chairs: 12 (8 males, 4 females)
- SOC members: 17 (8 females; from 14 countries, 6 continents)
- LOC members: 25 (4 females)

Figure 17: Group photos from the opening session, National Museum visit, Entoto Observatory visit, and conference dinner. Credits. A. Solomon and V. Oknyansky

Training for MSc/PhD students and young researchers

(5 - 6 Oct)

This training was organised before the IAUS 356 started, in one of the halls of the Addis Ababa University, with aim to improve the skills of our MSc/PhD students and young researchers who are working already at different universities and research centres. We had 45 participants in total, from different African countries, including Ethiopia (great majority of participants from different parts of the country), Rwanda, Uganda, Tanzania, Kenya, Nigeria, and South Africa. The training was planned not only for astronomy colleagues, but for benefiting the broader community. Therefore, one part of training (10 hours) was focused on 'Introduction to python' programming given by Dr. Rubén García Benito (IAA-CSIC, Spain), while the other (6 hours) was related with tips on 'CV, motivation letter, proposals, and research papers writing' given by Dr. Allison Man (University of Toronto, Canada) and Dr. Johan Knapen (IAC, Spain). Colleagues from astronomy, space physics, physics in general, and engineering attended the training. We got very positive feedback from both participants and trainers. Our appreciation goes to all facilitators, without whom this training would not be possible.

Figure 18: Student training (Credit: M. Povic)

Public talks and outreach activities at schools

(8 Oct)

During one afternoon we organised in collaboration with the Ethiopian Space Science Society (ESSS) 2 public talks at the Addis Ababa University, given by Prof. Christopher Impey (University of Arizona, USA) about 'Black holes and nuclear activity in galaxies' and Prof. Petri Vaisanen (SAAO, South Africa) about 'South African astronomy in 2020s'.

In parallel, outreach activities were organised in 8 public schools where more than 40 IAUS participants interacted with our primary and secondary school children and their teachers and promoted during several hours' astronomy and science.

In total, with all activities we reached between 700 and 800 school children, students, and general public. We are grateful to all facilitators for their volunteer work done during all activities.

Public Lecture Event

October 8, 2019

Starting from 9:00 LT @ AAiT

World Space Week

IAU International Astronomical Union

Speaker: Prof. Chris Impey
(University of Arizona, USA)

Talk title: Black Holes and Nuclear Activity in Galaxies

Short Bio:
Chris Impey is a University Distinguished Professor of Astronomy and Associate Dean of the College of Science at the University of Arizona. He has over 180 refereed publications on observational cosmology, galaxies, and quasars, and his research has been supported by $20 million in NASA and NSF grants. He has won eleven teaching awards and has taught two online classes with over 180,000 enrolled and 2 million minutes of video lectures watched. Chris Impey is a past Vice President of the American Astronomical Society and he has been an NSF Distinguished Teaching Scholar, the Carnegie Council's Arizona Professor of the Year, and most recently, a Howard Hughes Medical Institute Professor. He's written over 50 popular articles on cosmology and astrobiology, two introductory textbooks, a novel called Shadow World, and eight popular science books: The Living Cosmos, How It Ends, Talking About Life, How It Began, Dreams of Other Worlds, Humble Before the Void, Beyond: The Future of Space Travel, and Einstein's Monsters: The Life and Times of Black Holes.

Speaker: Prof. Petri Vaisanen
(South African Astronomical Observatory, South Africa)

Talk title: South African astronomy in the 2020s

Short Bio:
Prof. Petri Vaisanen is the Director of the South African Astronomical Observatory (SAAO) in Cape Town. The SAAO operates an Observatory in the semi-arid Karoo region in Sutherland, with nearly two dozen telescopes, of which the 10m class Southern African Large Telescope (SALT) is the largest. Petri has been at the SAAO for 15 years, heading the SALT Astronomy Operations before taking up his current post in 2018. Before coming to South Africa he also worked in Chile and the U.S. - he is originally from Finland, where he obtained his PhD from the University of Helsinki. His own research is on colliding and interacting galaxies and violent star formation. SAAO believes in contributing to astronomy on the whole African continent. This can be done utilising collaborations, research with SALT, currently the largest single telescope in the Southern Hemisphere, networking smaller optical telescopes intelligently to be globally competitive in the exciting developments of astronomy coming in the 2020s, as well as focusing on multiwavelength astronomy together with MeerKAT/SKA.

Figure 19: Poster announcing the public talks event (Credit: Sisay Fantahun0.

Figure 20: Pictures from the public talks and outreach activities (Credit: M.Pović, P. Shastri, S. Ridgway, C. Harrison, and Z. Beyoro-Amado)

Data lab training

(10 Oct)

During the afternoon of 10 of October, after all talks, practical session was organised for our MSc/PhD students and other IAUS participants on 'The NOAO Data Lab - An Open-Data, OpenAccess Science Platform' given by Dr. Robert Nikutta (NOAO, USA). We are very thankful to Robert for his support.

Lunch session on Astronomy in Africa

(10 Oct)

In parallel with the IAUS 356, there was a 2 days scientific-business meeting of recently reestablished African Astronomical Society (AfAS), 10-11 of Oct. We used this opportunity to organise a lunch session for presenting the AfAS to our participants and for discussing about the status of astronomy in Africa. We had a very fruitful discussion with approx. 70 participants attending the session. Few pictures are attached from

Figure 21: Astronomy in Africa - IAU 356 symposium lunch session (Credit: A. Solomon)

Training in practical astronomy for teachers and teachers' trainers

(12 - 13 Oct)

This training was carried out after the symposium at the ESSTI for 44 participants, who were public school teachers, teacher trainers, and ESSTI and ESSS staff members and volunteers actively involved in astronomy/science outreach activities in Ethiopia. We also had 2 colleagues from Tanzania and Zambia as participants. On Saturday morning the training was given by 4 ESO colleagues who developed and brought different outreach materials that were used during the workshop. We are very much grateful to Dr. Chris Harrison, Ms. Miranda Jarvis, Dr. Gabriela Calistro Rivera, and Dr. Chiara Circosta for giving the training and for donating all their materials to the ESSTI. We are also grateful to Prof. Prajval Shastri who also spent Saturday morning with us and shared with teachers some of her experiences.

Figure 22: Pictures from the training (Credit: M. Pović)

Saturday afternoon and Sunday the training was done in collaboration with the Network for Astronomy School Education (NASE), where experiments have been constructed using recycled and easily accessible materials for showing different physical and astrophysical laws. Three workshops were given by Dr. Mirjana Pović, related with solar spectrum and light, stellar properties and stellar lives, and expansion of the universe. Introduction to Stelarium and stargazing was given by Mr. Alemiye Mamo.

Sponsors

This symposium and all organised activities would not be possible without support and help of the: International Astronomical Union (IAU), Ethiopian Space Science and Technology Institute (ESSTI), Entoto Observatory and Research Centre (EORC), Ministry of Innovation and Technology (MInT), International Science Programme (ISP), Development in Africa with Radio Astronomy (DARA), UK Science and Technology Facilities Council (STFC-UKRI), Instituto de Astrofísica de Andalucía (IAA-CSIC), Spanish Astronomical Society (SEA), Ethiopian Space Science Society (ESSS), East-African Regional Office of Astronmy for Development (EA-ROAD), Addis Ababa University (AAU), and Nature Astronomy.

In the following we provide description on different activities organised during the symposium. Pictures from all activities can be seen at:

https://drive.google.com/drive/folders/1TRHL-iKvUIElB7S6nfqGro2_KsLDwrs1

We opened the page for uploading all presentations at:

https://zenodo.org/communities/iau356/?page=1&size=20.

Finally, we are currently working on the book of proceedings to be published under the Cambridge University Press.

Acknowledgments

We highly appreciate the support of all institutions and people who in one way or another contributed to the realisation of this symposium, from the very initial stages of proposal writing and its acceptance, until the very final stage of all organisation. In particular, our gratitude goes to the IAU for giving us the opportunity and financial support to host for the very first time this symposium in Ethiopia and East-Africa. We also extend our thanks to the ESSTI and MInT for all the local support in terms of human and financial resources. In addition, this symposium would not be possible without huge support of SOC and LOC members, all our sponsors, invited speakers, all trainers and volunteers, and IAUS 356 participants. We hope that with all received support this symposium will contribute significantly to development of astronomy and science in Ethiopia and Africa. Thank you all very much for everything!

Announcements

Science:

The AfAS Science Committee comprises the following individuals:

Bernard Asabere, ASTRON/GRAO, Ghana
David Buckley, SAAO, South Africa (chair)
James Chibueze, NWU, South Africa
Kevin Govender, IAU-OAD, South Africa
Naftali Kimani, Kenyatta University Kenya
Renee Kraan-Korteweg, UCT, South Africa
Lerothodi Leeuw, UWC, South Africa
Jamal Mimouni, University of Constantine, Algeria
Charles McGruder, West Kentucky University, USA
Shazrene Mohamed, SAAO/UCT, South Africa
Mirjana Povic, ESSSI, Ethiopia
Zara Randriamanakoto, SAAO, South Africa
Somaya Saad, Helwân Observatory, Egypt
Kurt van der Heyden, NRF, South Africa
Charles Takalani, DSI, South Africa

The first meeting of the AfAS Science Committee was held on 1 May at which David Buckley was appointed the new Chair. Initial deliberations focused on the development of the 3-year operations plan, which was approved by the Executive Committee in June. The committee proposed a variety of activities to undertaken, covering the thematic area of 1.) communication, 2.) development of astronomy and 3.) human capacity development. Some activities straddle these themes and in some cases are open ended, with the expectation that they will evolve over time. The committee identified the tasks to be undertaken, together with their specific objectives and requirements for how they would be achieved. In addition, the timescales, risks and costs (where identified) were listed. The following is a summary of the tasks, some of which are combined:

1. Organization of meetings, including annual, regional and thematic, and supporting regular on-line seminars and colloquiua. This area is greatly impacted by the COVID-19 situation, so in the near term, these are most likely to be virtual meetings, e.g. on-line webinars.
2. Developing a list of science contacts within each country as an initial conduit of information relating to aims of the committee, particularly regarding research support and development.
3. A survey to be conducted amongst the AfAS membership and interested parties to help us to identify science focus areas of research groups leading to a roadmap.
4. Develop and strengthen international and national collaborations by creation of science working groups in Africa and establishing contacts with international organizations, including utilizing existing and future facilities, in Africa and internationally.
5. Develop a science portal which would help pull resources together in a coherent manner in order to:
    - Drive joint projects
    - Provide a library and space for journal sharing
    - Provide space for sharing science and astronomy strategies, develop collaborations and share research results
    - Listing of opportunities with respect to grants, collaborations, access to telescopes, etc.
    - Repository for teaching resources, including lectures, tutorial resources and on-lime courses
6. Support students and early career researchers through small research grants and prizes
7. Help foster archaeoastronomy research throughout the continent through developing cross-disciplinary connections

Many of the above are planned to be developed over the coming months and various members of the committee are already helping to initiate these. Of course, anyone who would like to assist would be most welcome.

David Buckley, Chair AfAS Science Committee

Outreach:

1. Amateur Astronomy Association Database

The Outreach Committee of the African Astronomical Society (AfAS) is creating a database of amateur astronomy clubs in Africa. This is to help us better connect with you. We hope that all of us can use this network to organise events, share knowledge, collaborate, and help each other. You can register your association with us by filling out a form at https://www.africanastronomicalsociety.org/amateur-astronomy-associations-in-africa/. The forms are available in English, French, Portuguese and Arabic.

2. Astronomy in Africa – Our Stories

The African Astronomical Society would like to curate and project the voices of astronomers in the continent in the form of short online videos. We feel that this is especially important in our current times, when many young students are at home due to the pandemic. If you are an astronomer working in Africa, or an African astronomer working anywhere in the world, join us in our project "Astronomy in Africa - Our Stories". We invite you to record a short video on some of the themes below. These will be made public. We invite participation from PhD candidates, postdoctoral fellows, faculty, and all scientists engaged in various forms of astronomy research.

For more information, please see https://www.africanastronomicalsociety.org/amateur-astronomy-associations-in-africa/

3. Working Groups

The Outreach Committee is forming Working Groups on various topics. Working Groups on (1) Affordable mobile planetaria, (2) Amateur radio telescopes, and (3) Astronomy events calendar have already been constituted. The members of each of the groups are listed at https://www.africanastronomicalsociety.org/2020/07/31/working-groups-of-the-outreach-committee/

Update on previous AfAS calls:

AfAS call for a new AfAS Logo

On 22 May 2019 AfAS opened a call for entries for a new logo design for AfAS, which closed on 31 July 2019. The AfAS Executive Committee established a team of independent and impartial adjudicators to scrutinise all logo designs submitted to AfAS in response to the call. AfAS has temporarily suspend the process to finalise the announcement of the outcome of the call and will continue to keep you updated.

Opportunities

AfAS 2021 SEED RESEARCH GRANT APPLICATION INSTRUCTIONS GUIDELINES

Application deadline: **30 November 2020**

Relaunched in March 2019 and currently funded by the Department of Science and Innovation in South Africa, the African Astronomical Society (AfAS) is the primary organisation representing professional astronomers from across the African continent. AfAS aims to be the voice of astronomy in Africa and to contribute to addressing the challenges faced by Africa through the promotion and advancement of astronomy while creating a globally competitive and collaborative astronomy community in Africa.

The AfAS Seed Research Grant

The AfAS Seed Research Grant supports research projects in Astronomy (including Astrophysics and Space Science) conducted by postgraduate students and/or early career researchers based in Africa. Two grants of up to ZAR 15,000 each will be awarded to outstanding applicants in 2021. The seed funding may be used for international/domestic travel, lodging, computer equipment and other research-related expenses.

Eligibility

- Applicants can be citizens of any country, provided they are based in Africa during the 2020-2021 academic year.

- Applicants are currently conducting research in Astronomy (including Astrophysics and Space Science) at an academic or scientific research institute in Africa.

- Applicants must be enrolled in a postgraduate level or they must have received their PhD degree within the past three years (i.e. between September 2017 - September 2020).

Application Procedure

Applicants should submit the following documents combined in one single PDF to Mr Charles Takalana (charles@africanastronomicalsociety.org) by 30 November 2020:

- A detailed curriculum vitae including a full list of academic publications and details of two academic referees;

- A research proposal, with a minimum length of five pages, including all tables and figures and the bibliography. The proposal should include (but are not limited to) the research title and abstract, the scientific rationale and an introductory background, the methodology and expected results, as well as the proposed timeline and a budget breakdown;

- A motivation letter addressed to the AfAS Seed Research Grant Committee;

- A proof of registration (for postgraduate students) or a proof of employment (for early career researchers) at an academic or scientific research institute.

Applicants should also arrange for signed recommendation letters from two academic referees to be sent directly to Mr Charles Takalana by 30 November 2020. At least one letter must be from a senior scientist (e.g. the advisor) familiar with the applicant's research work.

Incomplete applications or files received after the deadline, as well as applications which do not meet the conditions of eligibility will not be taken into consideration.

If you are submitting any supporting documents in your local language, you must attach at least an informal translation into English.

Selection criteria

Applications will be reviewed and ranked by the AfAS Seed Research Grant Committee which is composed of senior astronomers and members from the AfAS Science Committee. Applicants will be evaluated by the jury based on the following criteria:

- Quality of the research proposal (e.g. significance of the research statement);

- Publication track record, commensurate with the applicant's career stage;

- Excellence of the overall academic performance and achievements;

- Potential impact on growing research collaborations in Africa.

AfAS reserves the right not to accept any application in part or in whole.

Grant Awards Agreement

No funds will be released until AfAS has received the grant agreement signed by the successful applicants. The selected recipients are also required to submit a report including research updates and a financial report with expenses and scanned receipts of major expenses in the year following the award of the seed grant.

Estimated Timeline

- Opening of the call: 01 September 2020
- Closing of the call: 30 November 2020
- Applications review by the jury: between December 2020 - mid-February 2021
- Notification of successful applicants: 28 February, 2021

Enquiries

Zara Randriamanakoto

Early Career Representative Officer, African Astronomical Society Email: zara@saao.ac.za

Charles Takalana

Assistant General Secretary, African Astronomical Society Email: charles@africanastronomicalsociety.org

For more details on AfAS please visit: www.africanastronomicalsociety.org

OWSD-Elsevier Foundation Awards for early career women scientists from the developing world

The call for applications for the OWSD-Elsevier Foundation Awards for Early Career Women Scientists in the Developing World is now open.

Deadline for submitting applications is 30 September 2020.

Launched in 2013, the OWSD-Elsevier Foundation Awards for Early Career Women Scientists reward and encourage women working and living in developing countries who are in the early stages of their scientific careers, having often overcome great challenges to achieve research excellence. Awardees must have made a demonstrable impact on the research environment, both at a regional and international level, and must have received their PhD in the last ten years.

For more information on this award we encourage you to visit:

https://owsd.net/awards/awards

SAAO Research Fellow

The South African Astronomical Observatory (SAAO) invites applications for a two year (with 1-year possible extension contingent on funding and performance) postdoctoral position to start before 1 March 2021. We seek outstanding candidates with research interests in any area of observational astrophysics, instrumentation or modelling.

More information may be found at https://www.saao.ac.za.

The research fellowship is intended to offer an opportunity for excellent early career researchers to establish a track record of independent research. You are encouraged to contact any staff astronomers you may collaborate with, to discuss your research plans. While the primary duty of the fellow is the completion of research, you will be expected to make active contributions to the SAAO environment through, for example, student mentorship, service observing, contributions to science engagement or astronomy for development.

The minimum requirement for this position is a PhD in astronomy or related discipline An excellent publication record, commensurate with career stage, is desirable. Informal enquiries may be directed to A/Prof. Vanessa McBride vanessa@saao.ac.za.

Applicants should send a cover letter, curriculum vitae, statement outlining their research and broader interests and should arrange for 3 letters of reference to be sent to Mrs Linda Tobin linda@saao.ac.za, by 20 September 2020.

Office of the Secretariat

The AfAS Executive committee is pleased to announce that the Secretariat team is growing. Please join us in welcoming our new team members!

Mr Yunus Manjoo: Interim Secretariat and AfAS Project Manager

Mr. Mutshidzi Mclloyd Nelwamondo: AfAS Intern

Save the date!

XXXII IAU GENERAL ASSEMBLY

5 - 16 AUGUST 2024

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