

## Chapter IX. Non-AGN posters



# Science strategy of the African Astronomical Society (AfAS): *An outcome of the Science Business held in synergy with the IAUS 356*

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**Abstract.** Presented here, is a summary of discussions at African Astronomical Society (AfAS) Science Business Meeting, Addis Ababa, Ethiopia, 10-11 October 2019. This summary was deliberated with delegates of the International Astronomical Union (IAU) Symposium 356, during a lunch session of the meeting.

**Keywords.** African Astronomy, African Astronomical Society, Science Strategy

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## 1. Introduction

The African Astronomical Society (AfAS, [Buckley \(2019\)](#); [AfAS \(2019\)](#)) is a Pan-African Professional Society of Astronomers. The Society was relaunch at the Astronomy in Africa business meeting, which was held in Cape Town at the South African Astronomical Observatory on 25-26 March 2019. AfAS held a Science Business Meeting in Addis Ababa, Ethiopia, on the 10<sup>th</sup> to 11<sup>th</sup> October 2019, which was attended by about 30 delegates from Africa and the diaspora. One of the key aims and outcomes of the meeting was a draft strategy for the Science Committee of the Society. Presented here, is extracts from the resulting draft science strategy and summary of the discussions from the meeting, that was deliberated with delegates of the International Astronomical Union (IAU) Symposium 356, during a lunch session of the meeting. The goal was to get feedback and input from the IAUS 356 delegates on such discussions, given their deep and broad backgrounds, and to introduce them to the Society.

## 2. AfAS Science Strategy

As a professional astronomical society, AfAS recognises science and in extension the science committee as a cornerstone of the Association. The vision of the AfAS Science Committee is to create an interlinked and world-class African astronomy community contributing to the advancement of human knowledge. AfAS envisages establishing an experienced and representative science committee, which will carry out the mission to advance astronomy through the development of strategies, facilitation of interdisciplinary collaborations, encouragement of cross border engagements, and stimulation of human capital development. The meeting proposed objectives in these five categories or goals, that are itemized and detailed further below.

### 2.1. *To support the development and sharing of national strategies*

At this early developmental stage of the Society, points of contact in each African country must be established as they will be instrumental in identifying science focus areas of research groups in Africa - these focus areas would feed science strategies and be used to guide the science discussions at upcoming AfAS conferences/workshops, including AfAS2020<sup>†</sup>. A database of national and regional strategies may be compiled and used by AfAS to identify strategic science focus areas (or big science questions) that are of interest to the African astronomy community. Workshops at AfAS2020 or other meetings will create platforms to discuss strategic science focus areas for a connected African community in addition to this a task force of experienced individuals may be established to advise on the development of strategies and identify resources available (and required) in different locations. In the long term, African countries will be encouraged to have appropriately aligned strategies which include astronomy.

### 2.2. *To advance Astronomical Science and Technologies*

To take astronomy forward on the continent, science collaborations, research exchanges, focused meetings, and workshops including observational/hands-on activities can be used to connect research groups across Africa. For this AfAS will need to identify partners to support such meetings, workshops, and any other relevant activities, including fellowships, research grants. Wherever possible AfAS can encourage streaming and/or recording of science meetings, this will ensure that those who are unable to travel to such meetings have access to the content which may be instrumental in their research. AfAS can also facilitate coordinated access to research telescopes through requesting time on instruments available on the continent e.g., time on SALT earmarked for African researchers. The community can be encouraged through awards for recognition of Excellence. AfAS can establish a prize system for excellence in various areas and launch an AfAS fellowship to nurture early career researchers. However, to implement this AfAS may be required to establish an awards committee.

The African Astronomical community is gradually growing and it is important to carry out various skills development projects. Proposal writing skills for research funding and observing time can be delivered to members of this growing community through various workshops and mentoring programmes. AfAS can contribute to the exchange of knowledge through meetings and publications. These initiatives will provide a space for student contributions, non-research publications, historical information, and proceedings. To benefit the community AfAS can house databases of astronomy expertise, active research areas, infrastructures across Africa, and the African diaspora. This can be done by the development of a web portal for the exchange of information, which will be used to disseminate (open source) resources that will benefit astronomy, including research tools e.g. software packages and a list of experts.

### 2.3. *Human Capital Development*

AfAS is well-positioned as a professional society to create the bridge between teaching and research. This means that AfAS may have to identify and share information on available teaching materials and programmes e.g. lecture notes, books, etc. In addition to this AfAS can disseminate a list of online courses that could supplement astronomy teaching and research and establish a database of experts willing to offer courses in other universities. AfAS can play a role in driving collaborations for joint supervision,

<sup>†</sup> [www.africanastronomicalsociety.org/conferences-and-meetings/afas-astronomy-in-africa-meetings/afas2020](http://www.africanastronomicalsociety.org/conferences-and-meetings/afas-astronomy-in-africa-meetings/afas2020)

and implementation of twinning to support institutions without astronomy programmes. Part of this would be identifying sources of funding to support exchanges. AfAS may also encourage short term research visits between universities for postgraduate students and ensure that the African community is aware of training opportunities and scholarships: academic writing, schools, DARA, SKA, etc. This can be done by AfAS establishing strategic relationships with training programmes to create opportunities for Africans. AfAS may begin looking at identifying and disseminating information about scholarships available to African students and in the long term, AfAS may begin looking into the establishment of an AfAS scholarship.

In connecting the African community AfAS can play a role in identifying and sharing opportunities with robotic telescopes/remote observing to improve the quality of training e.g. symposia, workshops, etc. AfAS will need to also develop best practice guidelines for workshops including access to training materials and explore the feasibility of a certification/vetting/endorsement process. AfAS can be involved in arranging workshops for training of trainers and explore MOOCs to support trainer development.

#### *2.4. International and national engagements*

The major role of AfAS and a driving force for the Science Strategy is connecting the African community to international initiatives. This can be done through supporting and encouraging the presence of African delegates at international meetings and involvement in international science projects. Platforms may need to be established to raise awareness on international opportunities e.g. European Research funding, and support for African countries to become active participants in international fora. At present it is pivotal that AfAS focus on increasing African membership of IAU (African countries could become either full or observer IAU members), this process can be accelerated in light of the IAU General Assembly, which will be hosted for the first time on African soil in 2024. In addition to human capital efforts, it is envisaged that AfAS will engage with the relevant stakeholders for the protection of astronomy and astronomical facilities. This will involve Lobbying for dark skies and preservation and regulation of radio quiet zones, which are advantageous for astronomy. AfAS could facilitate connections for expert support for site testing and planning of new astronomical instruments and Infrastructure.

#### *2.5. Facilitate interdisciplinary collaborations*

Going forward partnering with relevant organisations outside astronomy on issues related to the AfAS vision would allow the society to bridge the gap between modern and indigenous astronomy. Processes that could be initiated may include identifying and engaging with groups that research, collect, register, preserve indigenous knowledge of astronomy, and/or translate astronomical terms into local languages. It is envisaged that future AfAS meetings may include interdisciplinary sessions.

### **3. Conclusion**

As a result of the Astronomy in Africa Science Business meeting, AfAS has been tasked with working on items deliberated at the meeting and is expected to report back on objectives and actions at the AfAS 2020 meeting. The Society has issued an open call for Nominations for members of the Science Committee in addition to members nominated at this meeting. This committee has also been mandated with identifying overlaps/gaps between AfAS science strategy and relevant African Union (AU) strategies that would form the basis for approaches to the AU.

## Acknowledgement

The authors acknowledge funding from the South African National Foundation (NRF) and Department of Science and Innovation (DSI) to the African Astronomical Society (AfAS) and the Ethiopian Space Science and Technology Institute (ESSTI) and partners for funding the meeting and its participation. Further, the authors acknowledge the organizers of this symposium for the opportunity to have the AfAs Science Business meeting in synergy with the symposium and to present and deliberate its outcome in a lunch session of the symposium. The content presented here had input from the participants of the AfAS Science Business and this record serves to further their participation, wishes, and those of AfAS.

## References

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