Column

Explained in 60 seconds: Community engagement at the XXXII IAU General Assembly

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In August 2024, the International Astronomical Union General Assembly will take place on the African continent for the first time in the organisation's 105-year history. To celebrate this historic event, the National Organising Committee's education and public outreach team is planning a series of events to encourage students and the general public across the continent to explore and engage with astronomy. This article describes how we will engage the African public before, during and after the conference.

Introduction

The International Astronomical Union (IAU) holds its largest conference, the General Assembly (GA), every three years. Throughout the IAU's history, General Assemblies have occurred in Asia, North and South America, Europe, and Oceania. This year, the IAU GA will occur on the African continent for the first time in the institution's 105-year history.

With each GA, the host country works hard to ensure that not only the scientists who attend benefit but also the surrounding communities. This typically includes organising a wide range of astronomy-related outreach activities, such as public lectures, workshops and observing nights.

This year, the Education and Public Outreach team for the XXXII IAU GA is planning a suite of activities for students across the African continent before, during, and after the conference. An important factor of our model is to build impactful and sustainable programmes, ensuring that the GA's societal benefits will not end in August 2024.

Leaning on previously established networks of astronomy communication volunteers across Africa, the team focuses on the Cascade Model of astronomy communication. The Model, first coined and developed by Professor Carolina Ödman-Govender, describes the generative and impactful process of training young people to train their peers, who then train others in turn. This powerful Model uses relatable role models to explain concepts, breaking the cultural and language barriers often experienced in other outreach methods. Applied to astronomy communication, this produces a wide network of involved and empowered youth who are inspired to continue engaging their communities with astronomy. By implementing this Model, the GA Education and Public Outreach Team will reach a continent-wide audience, particularly amongst the future generations of astronomers and astronomy communicators.

Before

In the lead-up to the GA, the #AfricaLookUp Campaign will highlight the rich cultural and historical connection that people all over Africa have to astronomy and the night sky. This Campaign, which approaches astronomy engagement from a creative lens, will celebrate global Indigenous knowledge systems, our shared humanity, and the connections we have made with the cosmos over millennia of observations. This will be achieved through the #AfricaLookUp to the Arts Open Nights held at the South African Astronomical Observatory. During these events, the public can engage with astronomers while merging their experience with various forms of artistic expression.

The Beauty of Astronomy Art Competition was launched earlier this year to motivate youth to create artwork inspired by their love for astronomy. The competition has since received over 100 submissions from students of all ages across Africa, and the winning artwork will be showcased at the IAU GA in August.

During

During the conference, scientists are encouraged to participate in the various planned activities, such as public lectures by astronomers, astronauts and a Nobel Prize winner, talks at local pubs and restaurants, possible radio connection to the International Space Station and even a hike: unique and engaging ways to interact with the public. These opportunities are often a chance for astronomers and astronomy communicators to make vital connections in new and sometimes unusual places, perhaps leading to future collaborations. As one outstanding example, the South African National Science Week will take place during the first week of the conference, providing a natural venue for astronomers' public engagement to have a broader impact nationwide. To show the human side of science and scientists, there will be a talent show where astronomers are encouraged to sign up to showcase their talents with the public in attendance.

A cultural exchange evening featuring Indigenous knowledge will take centre stage to encourage knowledge exchange and deeper connections. This unique event will celebrate the rich tapestry of cultures and their historical relationship with the skies through storytelling, music, dance, and poetry, providing captivating insight into the timeless wisdom of Indigenous traditions.

Additionally, a diverse and multi-layered education programme will be offered during the GA. Learners and teachers will be invited to the conference venue to encourage everyone, especially underrepresented

groups in science, technology, engineering and mathematics (STEM), to engage with astronomy in new ways and be exposed to authentic experiences in science. Astronomers in attendance at the conference are encouraged to sign up to visit local classrooms and discuss their work, their careers, and the process of science. Scientists will also be able to engage with learners online in a series of virtual meet-ups throughout the conference.

During the GA, teacher training sessions will be held, focusing on specific content covered in their curricula. These sessions aim to help teachers better understand the material while providing guidance on the most effective teaching methods. Specific curriculum outcomes will be shared with participants to allow them to properly prepare and deliver accordingly.

As an exciting and innovative first for international astronomy conferences, Radio Astro will be an online pop-up radio station designed to leave a lasting legacy in the hearts and minds of Cape Town's at-risk youth and listeners from vulnerable communities across the developing world. The primary goal is to train aspiring science communicators to broadcast highlights from the GA in an accessible and conversational radio format, providing them with valuable on-the-job training. Moreover, this platform aims to ignite the dreams of the next generation of astronomers and space scientists, helping them realise that their aspirations are achievable.

Figure 1: *Learner engagements during the National Science Week Launch in 2023. Image Credit: Zodwa Tiki (AfAS Junior Media and Outreach Coordinator)*

Figure 2: *The iThemba Youth Choir performed as part of the celebrations of African culture and Indigenous astronomy during the #AfricaLookUp festivities at the African Regional SHAW-IAU Workshop on Astronomy for Education. Image Credit: Lusanda Tamesi (African Science Stars Stakeholder Engagement Officer)*

After

The Cascade Outreach Project extends well beyond the GA, with students and young professionals from across Africa engaging in outreach and education activities within their local communities. This initiative promotes diversity, inclusivity, and relatable role modelling while training a new generation of scientists in communication and leadership skills.

The celebration of astronomy in Africa will continue throughout August as part of Africa Astro Month. This collaboration involves outreach professionals, amateur astronomers, and astronomy organisations across the continent, who will participate in additional astronomy outreach and education activities. Participants will also be able to visit organisations in other parts of Africa, volunteering and contributing to the outreach efforts.

Looking Forward

In modern times, it is no longer sufficient to continue to host massive global conferences as we have before. It is essential that "tried and trusted" methods make way for innovative and adaptable solutions if we are to ensure sustainable and meaningful impact for the benefit of all. Therefore, this year's IAU GA, and by extension its outreach and education programme, has established three key pillars: worldwide impact, increased accessibility through open-access hybrid means, and eco-conscience sustainability. It is with these goals in mind that all of our outreach and education projects were devised.

As the first GA on the African continent, participants, learners, and the public alike will undergo a unique experience. Not only will they be able to engage in the typical offerings of a scientific conference and its outreach programme, but they will also get to experience a proudly African innovation: an event that is not afraid to push the limits. Indeed, participants will be able to gain a glimpse into the future of conferences, with a global impact that will be felt long after the conference doors are closed.

Biography

Duduzile Kubheka is the BRICS Astronomy project coordinator at the South African Astronomical Observatory (SAAO). She oversees BRICS Astronomy initiatives, including the BRICS Intelligent Telescope and Data Network (BITDN), and leads activities aimed at societal benefits. Additionally, she co-chairs the Outreach and Education Committee of the African Astronomical Society (AfAS), implementing astronomy outreach and educational programs across Africa. Duduzile is also pursuing a Master of Philosophy in Science and Technology Studies (Science and Public Engagement) at Stellenbosch University's Centre for Research on Evaluation, Science and Technology (CREST).

Sally Macfarlane is the associate director for Development and Outreach at the Inter-university Institute for Data-Intensive Astronomy (IDIA). She is also co-chair of the Outreach & Education Committee for the African Astronomical Society (AfAS) / IAU GA 2024 and chair of the African Planetarium Association (APA). When not busy with these responsibilities (and sometimes during), she is an avid birdwatcher, a newly minted professional nature field guide, and a planetarium presenter.