



UN/Austria Symposium on
Access to Space: Holistic Capacity-Building for the 21st Century
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Availability of Space Science and Technology infrastructure in Africa

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Access to Space: Holistic Capacity-Building for the 21st Century

“What do we have in Africa that is related to Space?”

Space Science, Space Technology

Questions:

- ❖ Which African countries have their space agencies/programmes?
- ❖ Which have managed to put spacecrafts on orbit?
- ❖ Which have cubesat projects at universities and research centre?
- ❖ Have they built capacity capable of running these space activities?
- ❖ How many of them are really contributing to the knowledge?
- ❖ What is the size of infrastructure that is available in Africa now
- ❖ where does Africa go for capacity building in the fields of space science and technology?

Africa

- 54 countries
- Area: 30.37 million km²
- Population: 1.216 billion (2016)

Space Agencies

- Algeria
- Egypt
- Morocco
- Tunisia
- Ghana
- Nigeria
- South Africa
- Kenya

Initiatives: Uganda, Zambia

Space Science

- Observatories:
 - South Africa
 - Egypt
 - Ethiopia
 - Algeria
 - Morocco

Space Science

- The South African Astronomical Observatory (SAAO) in South Africa:
 - The Southern African Large Telescope (SALT): is the largest single optical telescope in the southern hemisphere and among the largest in the world.
 - It has been in full science operation since 2011

Space Science

- The South African Astronomical Observatory (SAAO) is the national centre for optical and infrared astronomy in South Africa.
 - The South African MeerKAT radio telescope is a precursor to the Square Kilometre Array (SKA) telescope and will be integrated into the mid-frequency component of **SKA** Phase 1



Source: <http://www.ska.ac.za/gallery/meerkat/>

Space Science

- The Ibn Battuta Centre for exploration and field activities:
 - located in the Universite' Cadi Ayyad of Marrakech (Morocco)
 - established in 2006
 - prepare and execute tests of rovers, landing systems, instruments and operations related to the exploration of Mars and Moon.

Space Science

- Entoto Observatory and Research Centre
 - Ethiopian Space Science Society (10,000 members since being launched in 2004).
 - east Africa's only space observatory
 - one of the prime places to view Orion's Belt

Space Science

- **Africa Initiative for Planetary and Space Sciences**

- **Square Kilometre Array**

Space Technology development

- Launch sites:
 - Kenya
 - Algeria
 - South Africa

Space Technology development

- Satellites:
 - Egypt
 - Algeria
 - South Africa
- Cubesat Projects:
 - Nigeria
 - Kenya
 - Uganda
 - Sudan
 - South Africa
 - Others..

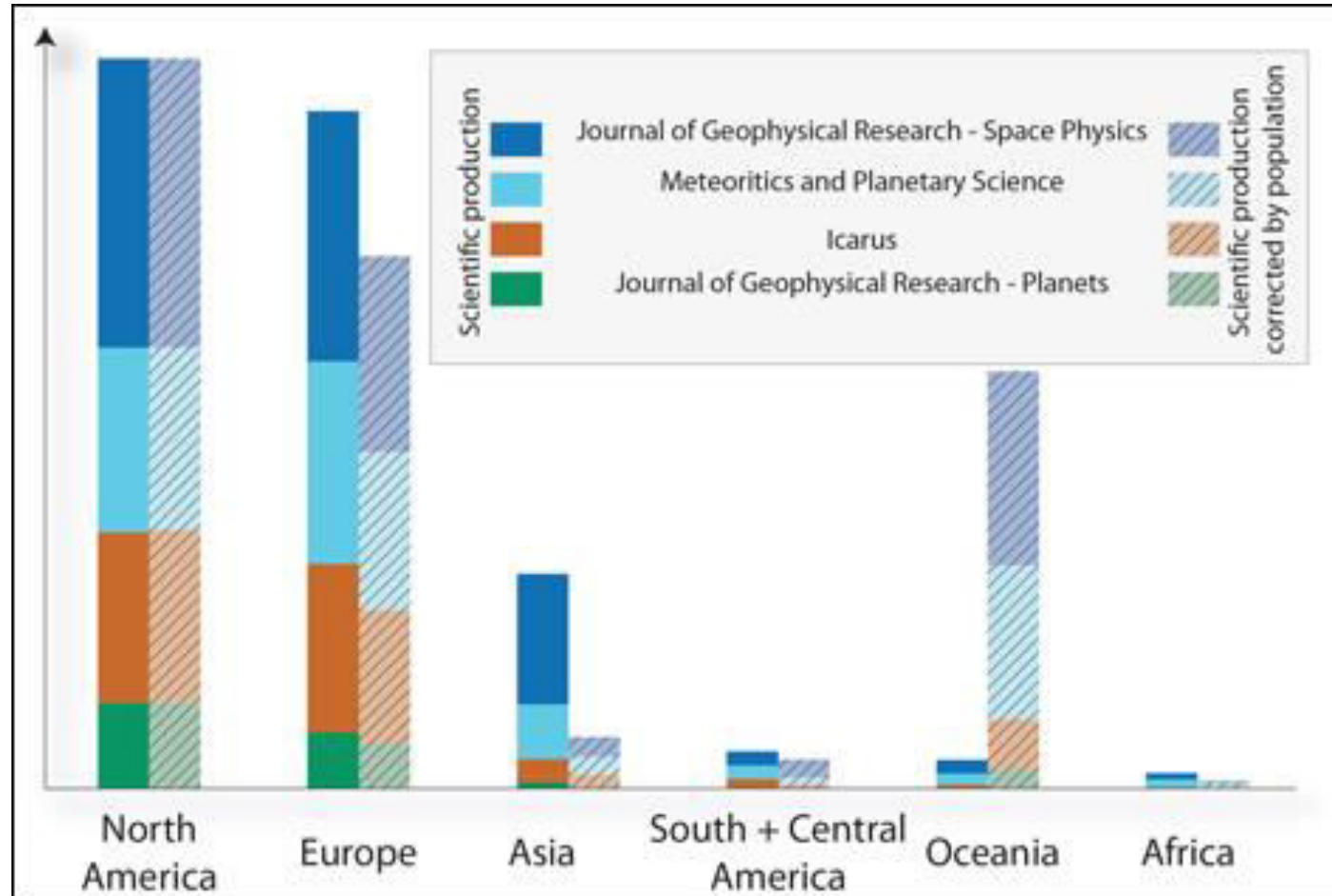
Remote Sensing

Other Space activities

Office of Astronomy for Development (OAD):

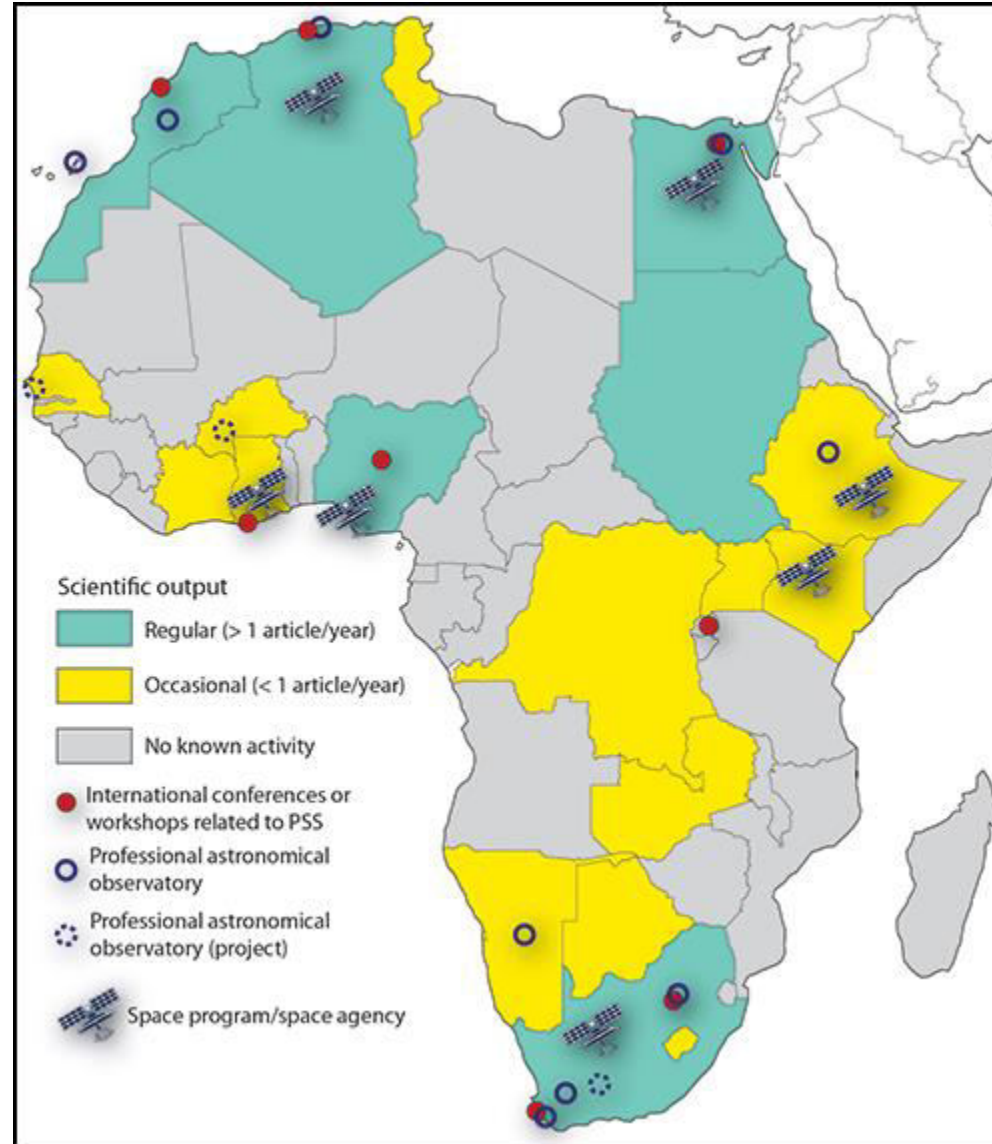
- The International Astronomical Union (IAU) in partnership with the South African National Research Foundation (NRF).
- The OAD was officially opened on 16th April 2011 at the South African Astronomical Observatory (SAAO) in Cape Town, South Africa.
- Since then nine regional offices have been established in Armenia, China, Colombia, **Ethiopia**, Jordan, **Nigeria**, Portugal, Thailand and **Zambia**

Contribution to Science



Source: <https://eos.org/opinions/africa-initiative-for-planetary-and-space-sciences>

Summary



Source: <https://eos.org/features/the-state-of-planetary-and-space-sciences-in-africa>

Thank you..