

Overview of IAU OAD Regional Offices and Language Centres

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This paper presents a very brief overview of the 10 Regional Offices (ROADs) and Language Centres (LOADs) established as part of the IAU's Astronomy-for-Development effort. Due to space constraints here, longer 2-page papers on each office are available as Supplementary Material in the electronic proceedings as well as on the website of the IAU's Office of Astronomy for Development (www.astro4dev.org). Authors are listed in alphabetical order of last name.

Astronomy is the science that connects the world; it is the science that aims to answer the most fundamental questions of the Universe we live in. The benefits of astronomy to society extend far beyond those of scientific knowledge. Astronomy can be used to help achieve the Sustainable Development Goals outlined by the United Nations. The IAU East-Asia Regional Office of Astronomy for Development (EA-ROAD) and the Chinese Language Expertise Center (LOAD) were established in 2012, and operate in the People's Republic of China, Mongolia, and the Democratic People's Republic of Korea and encompassing roughly 20% of the world's population. The consortium uses astronomy as a tool for development in the East-Asia region, with the aim of utilising all aspects of astronomy and astrophysics to promote development in the entire East-Asia region.

Armenia hosts the South West and Central Asian (SWCA) ROAD. So far, 6 countries have officially joined (Armenia, Georgia, Iran, Kazakhstan, Tajikistan, and Turkey). The SWCA ROAD plays an important role in maintaining contacts between the region's

countries with various cultures, and regularly organizes regional astronomical workshops and summer schools. The International Conference “Astronomical Heritage of the Middle East” sponsored by UNESCO was devoted to the role of astronomy in many fields of human activities. The SWCA ROAD’s Astro Tourism project perfectly fits to the IAU Strategic Plan’s goals as a tool for development of society. Up-to-date information about IAU SWCA ROAD is available on the website[†].

The Andean ROAD started its activities in 2013 and was officially signed into existence in 2015. Its most important success has been keeping a conversation with the central OAD office and the IAU members interested in development activities in the Andean region. The networks created in such conversations have helped us to keep motivated and define new strategies. The main challenge has been running the activities through volunteers and without permanent funding. Trying to define what development means for those in the region is another dilemma; the mainstream development concept used by the OAD is influenced by global north ideologies distanced from post-development and decolonial concepts, which are highly relevant to our realities.[‡]

The European ROAD was established in February 2018, jointly hosted by Leiden University and the European Astronomical Society. Its mission is to use astronomy to help accomplish the UN Sustainable Development Goals 4 (Lifelong Education), 16 (Peaceful Societies), 13 (Climate Action) and 5 (Gender Equality). Focusses are on young people in migrant and disadvantaged communities and contributing European partnerships and resources to global activities. Although we seek structural funds for a ROAD coordinator, the office will initially be supported by relevant European Commission projects. Following EU Universe Awareness (2011 – 2013) and EU Space Awareness (2014 – 2017), Leiden University will start coordinating SPACE.EU in 2019. This will contribute to the mission of the ROAD with a portfolio of activities relevant to SDGs 4 and 16 for young people in disadvantaged communities.

Since the official launch of West African Regional Office of Astronomy for Development (WAROAD), in November 2015 at Nsukka, Nigeria, the West African Region has witnessed increased activities in Astronomy outreach, education and research. Among these activities are: (1) Formation of Astronomy clubs in many institutions across the region including Burkina Faso, Ghana, Nigeria, Senegal, among others. (2) Hands-on Basic Space Science Workshop for primary and secondary school science teachers in Nigeria. (3) Astronomical outreach/workshops at the schools and public levels especially the AstroBus activity by Senegal among others such as eclipse observations. (4) Astro Camp for girls (5) The West African International Summer School for young Astronomers. (6) Dunlap Institute for Astronomy and Astrophysics, Canada and University of Toronto, Canada. Funds for these activities are locally sourced with support from OAD, SKA, ICTP, DARA Project, etc., though getting enough funds to run our projects has been the greatest challenge. In terms of astronomy research facilities, the region can confidently boast of a 1m optical telescope in Burkina Faso and the converted 32m radio telescope in Kutunse, Ghana.

In the past decade, astronomy and space science showed significant development in the East African Region. The establishment of space agencies and institutes in Kenya and Ethiopia, formulation of space policies in Ethiopia and the introduction of astronomy and astrophysics both in the curriculum and as a specialty on both undergraduate and postgraduate levels in universities in Ethiopia, Kenya, Uganda and Rwanda, contribute a lot towards the region’s success. Moreover, the establishment of East Africa Astronomical Society (EAAS), East African Astrophysics Research Network (EAARN) and East Africa Regional Office of Astronomy for Development (Eaf-ROAD) all played a role for the

[†] <http://iau-swa-road.aras.am/eng/index.php>

[‡] Grosfoguel, R. (2002), Colonial Difference, Geopolitics of Knowledge and Global Coloniality in the Modern/Colonial Capitalist World System, *Review* 19, 2, pp. 131-154

development of the field in the region. Though there are promising landscapes to flourish astronomy and space science in the region, there are also bottlenecks in coordinating and synergizing the region to reach the point where astronomy should be. Thus, EAF-ROAD will take the lead and create a platform that can be used to engage government and policy makers, science educators, advocates and professional societies to be aware about the role of astronomy for development and to inspire and attract young people to the field in line with the SDGs and IAU 2020–2030 strategic plan.

The Southern African Regional Office of Astronomy for Development (SAROAD) came into being on the 14th of August 2014, after the signing of the Memorandum of Understanding between the Copperbelt University (CBU) and the IAU in Kitwe, Zambia. Since then there have been both achievements made by the office and challenges faced. Among the notable activities of SAROAD are the hosting of the annual regional Astronomy workshops (AstroLab), outreach to Schools, public engagement and dissemination of information about new developments and upcoming events in astronomy and space science. Three AstroLab workshops have already been held and several outreach activities carried out. The regional office has been facilitating the involvement of member states in most astronomy cornerstone projects.

The Portuguese Language Expertise Centre for the Office of Astronomy for Development (PLOAD) is hosted by NUCLIO in Portugal since 2015. The vision is to use astronomy as a tool for development in this specific region and language, namely in the Portuguese speaking countries and communities at a global level. PLOAD acts as a link between institutions with common objectives regarding Astronomy, in a concerted action following the three tasks forces: Astronomy for Universities and Research, Astronomy for Children and schools, Astronomy for the Public. The PLOAD mission is to fulfil its vision by following the guidelines of the IAU strategic plan and to build on existing challenges and opportunities towards strong collaborative and active structures. This mission is being accomplished by several steps, starting from a careful research of resources and existing needs and the design of an effective implementation strategy of aid and support.

The Southeast Asia Regional Office of Astronomy for Development (SEA-ROAD) is hosted at the National Astronomical Research Institute of Thailand. SEA-ROAD aims to strengthen the already existing Southeast Asia Astronomy Network's (SEAN) ties among the active national members as one of the driving forces behind SEA-ROAD. It aims to integrate SEA-ROAD with the International Training Centre in Astronomy under the auspices of UNESCO (ITCA) via trainings and workshops such as winter and summer schools in all levels covering schoolteachers, young researchers, university students, university lecturers, etc. SEA-ROAD aspires to be the ultimate human resource database and excellence centre in Astronomy of the region that also taps on value chains of astronomy and related sciences in the region. SEA-ROAD activities 2017 to August 2018 at a glance: 21 Schools/trainings/workshops; 25 Countries participated; 766 Participants; 722 Southeast Asian participants.

The Arab Regional Office of Astronomy for Development (Arab-ROAD) and the Arabic Language Expertise Center (Arab-LOAD) is hosted in Jordan by the Arab Union of Astronomy and Space Science (AUASS) since December 2015. Since its official inauguration, the office has been organizing local and regional activities in collaboration with the Royal Jordanian Geographic Center (RJGC), Jordanian Astronomical Society (JAS), the Syrian Astronomical Society (SAS), the Sharjah Center for Astronomy and Space Science (SCASS), the Oman Astronomical Society (OAS), the Sirius Astronomical Association (Algeria), Ibn al-Haytham Association for Science and Astronomy (Algeria), the Tunisian Astronomical Society, and the Sudan Astronomical Society.

These 10 offices, together with the OAD in South Africa, form the core of the IAU's efforts towards especially Goal 3 of its 2020–2030 Strategic Plan, namely “The IAU promotes the use of astronomy as a tool for development in every country”.