

# The United Nations Open Universe Initiative

Ulisses Barres de Almeida 

Brazilian Center for Physics Research (CBPF)  
Rua Dr. Xavier Sigaud 150, 22290-180, Rio de Janeiro, Brazil  
email: [ulisses@cbpf.br](mailto:ulisses@cbpf.br)

**Abstract.** In this contribution I will briefly introduce the concept and objectives of the Open Universe Initiative, as well as describe the first steps of its implementation by Brazil, in conjunction with the United Nations Office for Outer Space Affairs (UNOOSA), aiming to encourage new interested parties to join the Initiative.

**Keywords.** astronomical data bases, methods: data analysis, sociology of astronomy

---

## 1. Motivation and Concept

Much has been done in recent years, especially in space astronomy, to offer openly accessible data and user-friendly platforms that demonstrate a natural evolution in the field of space sciences towards a more transparent and inclusive ecosystem of services. However, despite the recent progress, there is still a considerable degree of unevenness in the resources available from various providers of space science data, and on the capabilities for exploitation of such information by the various potential groups of users across society and around the globe. Further efforts are therefore necessary to expand access to data and data services in space sciences, promoting a significant data-driven surge in training, education and discovery that may inspire the new generations. Such a process should be extended to non-scientific sectors of society.

The Open Universe Initiative, currently under implementation by the United Nations Office for Outer Space Affairs (UNOOSA), in cooperation with the Government of Brazil, is a project to foster the continued development of a culture of open shareable data in astronomy and space sciences, aiming to serve as a tool contributing to promote quality education and capacity building in the space sector.

Developed in the context of the Space 2030 Agenda and the United Nations Sustainable Development Goals, its principal objective is to impact education and development at a global scale. The original proposal of the Initiative – which was firstly presented to the Committee on the Peaceful Uses of Outer Space (COPUOS) in 2016 by the Government of Italy, with the support of Brazil (COPUOS Research Paper A/AC.105/2016/CRP.6) – stems from the view that scientific data, including space science and astronomical data, are a common good that should be freely available to the benefit of all people. In fact, the Initiative supports the idea that open data is today the primary entry door to an equitable access to space and to the democratic distribution of the benefits resulting from space exploration.

Under the leadership of the United Nations, Open Universe plans to achieve these goals by improving international cooperation and fostering partnerships to the development of innovative tools that improve data accessibility and usability at all levels, from the expert to the interested citizen, thus linking holders of astronomy and space science data

with an ever-broader world community of users that can exploit those data for whatever scientific, educational or cultural purpose.

The United Nations Office for Outer Space Affairs (UNOOSA), as the UNs dedicated entity for space affairs, works on the legal, policy and capacity building aspects of international cooperation in the peaceful uses of outer space. For the Open Universe initiative, UNOOSA acts as the central node and executive secretariat. As the central operational node of the initiative, it will support the conduction of capacity building activities and foster best practices for open shareable data policies to contribute to the development of space sciences globally, helping to bridge the gap between developed and developing nations.

Having the UN as a central broker in the international cooperation, supported by Brazil and the other participating members, the Initiative is open to all types of public entities dealing with data in astronomy and space science, whether governmental institutions, non-governmental organisations or intergovernmental associations. Private entities accepting the licence conditions on their data are similarly welcome to take part in the Open Universe. Participant institutions will therefore be expected to contribute with the provision of data, documentation, software, training, and educational material.

## 2. Status Overview

Following the initial proposal at COPUOS in 2016, the initiative was included among the activities to be carried out in preparation of the fiftieth anniversary of the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE+50). A number of public discussions and international meetings were held, that defined in detail the structure and objectives of the Initiative, among which:

- the 2017 ASI-UNOOSA Preparatory Expert Meeting (A/AC.105/2017/CRP.22)
- the 2017 UN/Italy Workshop on the Open Universe Initiative (A/AC.105/1175)
- the participation in the UNISPACE+50 Conference, in 2018<sup>†</sup>
- and the participation at the UN/Austria World Space Forum, in 2019<sup>‡</sup>

As a conclusion of this extensive preparatory period, the Initiative has been finally welcomed to be developed under the leadership of UNOOSA as part of its Capacity Building Programme, and in the context of the activities to be conducted as part of the Space 2030 Agenda (COPUOS Working Paper A/AC.105/C.1/2020/CRP.16).

The formal start of the initiative is planned for 2021, in partnership with the Government of Brazil, through an implementation agreement between UNOOSA and the Ministry of Science, Technology and Innovation, after which official activities will commence, and additional partners are welcome to join.

Despite the initiative being still pending a formal foundation, pilot projects have been developed during the past several years by the various institutional partners in an effort to demonstrate the principles and feasibility of the proposal. A summary of all activities can be found in the recent reference by [Barres de Almeida \*et al.\* \(2020\)](#), the principal one being the Open Universe prototype portal developed by the Italian Space Agency<sup>§</sup>.

## Reference

Barres de Almeida, U., Giommi, P. & Pollock A. 2020, [arXiv:2006.09168](#), to appear in “Annals of Brazilian Academy of Sciences”, Proc. BRICS Astronomy Workshop (BAWG 2019).

<sup>†</sup> <https://www.unoosa.org/oosa/en/ourwork/unispaceplus50/index.html>

<sup>‡</sup> See <https://www.unoosa.org/oosa/en/ourwork/hlf/2019/world-space-forum-2019.html>

<sup>§</sup> <https://openuniverse.asi.it>