

Segundas Astronômicas at UFRGS Campus do Vale Observatory

Instigating a curious look at the sky.

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Abstract. Astronomical observations, whether with the naked eye or through equipments, have the potential to spark interest in science and attract audiences of all ages. In this work, we present the motivations that led to the creation of the Segundas Astronômicas project, carried out with the support of the Astronomy Department of UFRGS. The activities consist of nighttime astronomical observations every Monday at the Campus do Vale Observatory. We will also discuss the challenges we faced throughout the project's development and the results observed since its resumption.

Resumo. Observações astronômicas, seja a olho nu ou através de equipamentos, têm o potencial de despertar o interesse na ciência e atrair público de todas as idades. Neste trabalho, apresentamos as motivações que levaram à criação do projeto de extensão Segundas Astronômicas, realizado com o apoio do Departamento de Astronomia da UFRGS. As atividades consistem em observações astronômicas noturnas todas às segundas-feiras no Observatório do Campus do Vale da UFRGS. Abordaremos, também, os desafios encontrados ao longo do desenvolvimento do projeto e os resultados observados desde sua retomada.

Keywords. Teaching of Astronomy – Sociology of Astronomy

1. Introduction

Sky observation activities, whether with the naked eye or using equipment, have the potential to awaken scientific curiosity and attract audiences of all ages. With this in mind, there was the motivation to create Segundas Astronômicas (Astronomical Mondays, Fig. 1). The project is a cultural activity held every Monday at the Astronomical Observatory of the Campus do Vale (OCV) of UFRGS, focusing on astronomical observation of the night sky through telescopes and astrophotography. Created by Prof. Alan Alves Brito in 2016, the project remained active until 2019, when there was a pause. Activities only resumed in 2022, thanks to the students' initiative and coordination by Prof. Marina Trevisan. Observations are always free of cost and aimed at the general public. The team has more than 26 people, comprising volunteers, teachers and students of the Observational Astronomy course.

The project contributes to the region in different ways. Until recently, three astronomical observatories were available to the population of the Porto Alegre (POA) region: the Astronomical Observatory (OA) and the OCV, both at UFRGS, and the PUCRS Observatory. Due to the indefinite closure of the astronomy laboratory at PUCRS and the structural problems that prevent the OA from attending a large number of people, the OCV has taken on the role of the only astronomical observatory that is able to attend large audiences in POA and the metropolitan region, through the Segundas Astronômicas project.

Another contribution stands out in the campus dynamics. Campus do Vale is one of UFRGS campuses, located in one of the capital's peripheral neighbourhoods. Despite being open at night, the campus offers few cultural and scientific attractions to the local community (students, technicians and teachers) and to the community outside the campus. Providing cultural activities creates opportunities for people to be more present in a place, leading to an increased sense of security (Jacobs 2014). In this sense, the activity adds to the efforts to occupy this important space culturally and scientifically, both by the external commu-



FIGURE 1. Astronomical observations at Campus do Vale Observatory.

nity and the academic community, thus ensuring the evening and night courses.

2. Objectives

During the observations, we always try to stimulate the public's scientific curiosity through creative introductions to each celestial object to be observed. The importance of science communication becomes clear when we analyze that misunderstanding concepts can lead to alienation about the relevance of science in the development and progress of society, as well as increasing discredit and distrust in various important research results today (Farias & Maia 2020). In addition, outreach projects such as Segundas Astronômicas ensure that the university is always open to the community, thus bringing the academic environment closer to the general public. This has the significant potential to encourage visitors to choose careers and university courses (Barros, Langhi & Marandino 2018).

The project also contributes to the curricularization of extension at UFRGS. In December 2018, the National Education

Council (CNE) established that higher education institutions should implement at least 10% of the workload of their undergraduate courses for university extension by 2022. In this sense, the project adds to the initiatives of proposals for activities that meet the curricularization of extension, recognizing their importance. The project was integrated into the Observational Astronomy course at the UFRGS Astronomy Department.

3. Methodology

The methodology for carrying out the extension practice is divided into topics of theoretical and technical foundation and reflection on the activities. In addition, to investigate the impact, we adopted a qualitative and quantitative research methodology. The group of volunteer students who act as monitors are organized into teams on a weekly basis. This way, a relay takes place to avoid overloading them.

As for the background, we organized a selection process so that new volunteers from any UFRGS course would have the opportunity to take part in the project. Since monitors occupy roles that range from scientific communicators to technical occupations (Barros, Langhi & Marandino 2018), it was decided that some topics needed to be learned, such as operating the telescope with the computer and the basics of position astronomy and cultural astronomy.

In order to encourage volunteers to develop and reflect on methods of communicating science to different audiences, they were asked to create a Catalog of Observable Objects. In this sense, in the proposed activity, the students developed research and writing skills in the context of science communication. The importance of this activity is evident when considering the didactic transposition necessary in non-formal education and dissemination spaces (Barros, Langhi & Marandino 2018).

To expand the project's reach, different methods were explored: creating the Observatory and project websites¹; making flyers, bookmarks, posters and stickers; publicizing the project on social media platforms; partnering with UFRGS Notícias and the Academic Directory of Physics Students (DAEF). To measure the project's impact, the public was asked to document their visit in a guestbook. Through this data collection, we were able to track the number of visitors per night, as well as their recurrence (those who returned). In addition, emails were also collected, so it was possible to contact visitors again and share a satisfaction survey form.

4. Results

Since the project was restarted, the reach of the Observatory's pages, which mainly publicize Segundas' activities, has reached more than a thousand accounts.

As a way of measuring the impact on the volunteers' academic development, we drew up a form. Of 10 respondents, 100% agreed that the project helped with their academic development. When asked what taking part in the project means to them, the answers were surprising. We received statements that the project acted as an incentive to stay on the course. This is undoubtedly an encouraging result, given the high rate of 75% of students dropping out of Physics courses, according to the 2019 Higher Education Census (Inep). So, the project contributes not only to the qualification of these students but also to their permanence in the Physics course.

The survey revealed that the project met the public's expectations but that there is still a lot to do. The main way people

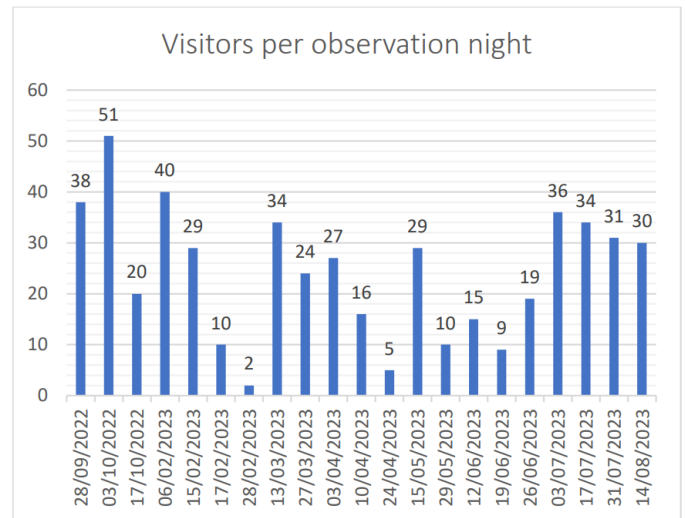


FIGURE 2. Histogram of visitors per night.

found out about the project was through friends (53.3%). This shows us the existence of a community that attends and appreciates the activities promoted, but the audience is limited to local students.

Since the project resumed its activities in October 2022, 21 observation nights have been hosted. More than 500 people have visited the OCV to take part in the events, and it was possible to calculate a recurrence rate of 10%, meaning that for every 100 visitors, ten returned. In addition, we were able to construct a histogram showing how the number of visitors per night fluctuates (Fig. 2). As there are still too few events to make an accurate analysis, we can only make optimistic bets and predictions. It is possible, based on the knowledge that most of the public are still students, to make a connection with the beginning and end of the semester when there are fewer visitors.

5. Conclusions

Finally, there is no denying the project's contribution to local access to culture, to the training of undergraduate students, to the revitalization of the campus in the evenings, as well as its contribution to the Brazilian Constitution itself. However, several points remain to be considered. From the collected data and feedback received, it is clear that the project needs to expand and thus reach the target audience of the extension: the community outside the university. With this in mind, we are redoubling our efforts to publicize the project. In this way, we can have the general public as our main visitors.

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¹ <https://www.ufrgs.br/segundas-astronomicas/>