

# The Astronomy Translation Network: Outreach Action and Advocacy in the Context of IAU's 2020-2030 Strategic Plan

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**Abstract.** The Astronomy Translation Network represents the first attempt to implement a global network connecting translation needs with volunteers' efforts for providing high-quality astronomy education and outreach materials in different languages. In this paper, we share what we learned in the first phases of this project and the challenges faced on —“How to keep volunteers motivated;” “How to select good resources;” and “How to ensure high-quality contents.”

**Keywords.** outreach, translations, accessibility

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## 1. Background

Although many excellent resources in astronomy education and outreach exist worldwide, most of them are only available in English, thus preventing non-English speakers to have access to them. As stated in the International Astronomical Union (IAU) Strategic Plan 2020-2030, one of the goals of the IAU Office for Astronomy Outreach (OAO) is to “facilitate international communication through exchanges and translations.” Translation is indeed an essential tool of astronomy communication. Translation efforts do exist individually, but are limited and lack visibility. Furthermore, the language barriers often cause individuals to reinvest in the same limited resources. The IAU Office for Astronomy Outreach along with the National Astronomical Observatory of Japan have recognized this issue and identified the need for a global translation network to centralize materials and connect translation needs to volunteers' efforts in a global framework. This idea was very ambitious, and we started to design the framework with different stakeholders as part of the Communicating Astronomy with the Public 2016 (CAP2016) Conference in Colombia. Through an interview process conducted with 12 participants in 2016, we obtained a better understanding of the global translation needs in astronomy communication.

A majority of the participants reported difficulties with teaching materials in English and expressed the need for translated documents in their local or national language. The interviewees felt both difficulties and benefits from their translation experiences. Listed obstacles included the lack of time, difficulties in assessing the quality of the documents, and the lack of language skills. Listed benefits included the opportunity to learn about English language and astronomy. They also mentioned the following elements as essential

to maintaining volunteers' motivation: reaching many people, providing visibility, recognition and a human network for the volunteers, proposing good materials and providing good management.

A second survey, the Survey on Translation for Astronomy Education and Outreach Resources was drafted by Gabrielle Simard and distributed by the ATN Project Manager Yukiko Shibata to volunteers within the OAO and Astronomers Without Borders (AWB) collaborators' networks between August 9th and October 2nd, 2017. The focus of this survey was on one side to collect suggestions of resources to translate and on the other side to identify interest by volunteers in participating in different tasks related to the ATN. In total, 67 respondents answered the survey and helped elaborate a resource selection work flow that was later implemented within the ATN and is still used to this day. A total of 60 resources were suggested by the respondents which gave us a clear idea of the needs in terms of translated materials: 14 of these recommended resources were astronomy education activities. The survey also showed encouraging results in terms of language diversity, with a pool of 29 different spoken languages and 30 different countries.

## 2. The Astronomy Translation Network (ATN)

Guided by the results of this preliminary research, we drafted a plan of the project with the assistance of Thilina Heenatigala. Our project's goals were the following: create a volunteer network able to support translation needs and provide good astronomy materials accessible to everyone without any language barrier, while preserving the resources' high quality. Moreover, one of the key objectives of the ATN project was to build an online community of volunteers able to exchange, connect, support and learn from each other. Thus, we had to avoid creating a individualistic and competitive environment. To ensure the quality of our translated documents, we developed a three-step process work-flow: after translation, proof-readers would check the general writing quality. And before publication, scientific reviewers would check the scientific accuracy and the use of terminology.

To facilitate the work-flow of translations within the same language, we established Language Groups. These groups are set up once the number of volunteers for one language reaches ten. We then proceed to nominate a Language Coordinator, in charge of supervising the translation activities of their group. The Language Coordinators are also the primary contact points between the project manager and the volunteers. In August 2017, we opened the volunteer registration on our website and started to test the work-flow of translation and review from English into other languages.

In May 2018, we opened a translation request form on our website that allows individuals to submit suggestions of materials to translate. In June of the same year, the test phase ended and we launched the operational phase with 151 volunteers on the platform, speaking 42 local and national languages. Our first pool of material consisted of twenty resources from the IAU astroEDU project (peer-reviewed activities for science education), IAU website contents, and activities of astronomy for inclusion.

The various communications between members of the ATN is done through the online project management platform Basecamp, which allows us to send instant messages, schedule tasks in a calendar and create to-do lists with specific assignments for translation, proof-reading and scientific revision. All of our documents are stored in Google Drive, which allows volunteers to edit their work online, as well as to keep access to previous versions of the documents if needed. Important notifications are sent through mail when necessary. Our website allows us to present our project, publish our translated

documents, and offer our volunteers online tools like astronomy glossaries and translation guides to help them in their tasks.

### 3. Achievements

The Astronomy Translation Network (ATN) currently has 271 volunteers registered across 45 languages. In the test phase, we established five Language Groups: Indonesian, Portuguese, Chinese, French and Spanish. German and Japanese volunteers were already translating individually. Since the launch of the operational phase, we have established three more Language Groups: Filipino, Polish and Simplified Chinese. With the agreement of the respective Language Coordinators and in accordance with their use of simplified and traditional Chinese characters, we modified the names of the two Chinese Language Groups to Traditional Chinese and Simplified Chinese.

To prevent volunteers with no Language Groups to become inactive, we decided to introduce Language Teams in August 2018. These teams consist of volunteers who have not yet reached ten members. So far, volunteers in Italian, German, Dutch and Hindi languages have started the translations of material.

To date, fifteen documents have undergone the full translation work-flow and have been published on our website, where they are available in PDF and DOC format for downloading. Another 59 documents are pending and are being worked on by our volunteers. The completed translations are systematically published with credits to the translators, proofreaders and scientific reviewers.

The issues that rose in different Language Groups were resolved by discussions with the respective Language Coordinators and testing individual solutions adapted to each situation. Thanks to Mathieu Isidro from the Square Kilometer Array (SKA), we collaborated with students from ISIT, a translation and intercultural communication school in Paris, France. Through this collaboration, we learned best practices in translation, platform design and management. In July and August 2018, we collaborated with the World Space Week Association to translate their poster for the 2018 event in 21 languages. The posters are all published and available for download both on our website and on the World Space Week website.

In July 2018, we completed the migration of our website from Google to Wordpress. The latter offers us more complete and adaptable features for the use of our network, and offers more user-friendly interfaces. In order to increase awareness of inclusion and diversity issues in astronomy, and in alignment with one of the IAU's goal for the 2020-2030 Strategic Plan, to "foster inclusiveness in the advancement of astronomy," the ATN volunteers have started using inclusive writing in their practice of translation, whenever it was found to be relevant.

### 4. Challenges

This project represents the first attempt to implement a sustainable global translation network in astronomy communication, and we are facing many challenges. Many aspects like building long-lasting partnerships, collaborations, funding, development of our social media presence and our platform for recruitment of volunteers are still a work in progress and require a team working on these specific tasks. We will focus here on three challenges that will determine the future of the ATN. The first important one concerns the recruitment of human resources to assist the further development of the project.

Our second challenge concerns the development of our social media presence as a specific goal for the next months to come. With an important and growing community of

amateurs and professional astronomers, students, educators and astronomy enthusiasts all over the world, the ATN must have a meaningful and impactful presence on the different IAU and OAO channels of communication in order to play a significant role in sharing and connecting astronomy with the public.

Lastly, our most important challenge for the upcoming months will be to assess the usage of our translations and their relevancy for our public. This challenge is itself tightly linked with the development of our social media presence, which will help promote and distribute our material, and therefore will increase its visibility. Our platform and translation services must always be driven by the needs of the community. We must therefore make sure that our material is effectively used after being translated, and that our users are satisfied with both the quality of our translations and the nature of the documents we choose to translate.

## 5. Final Considerations: Sustainability

Now, we are at a turning point with the project regarding development and sustainability. In addition to the listed accomplishments, most of the challenges we are facing are related to the issues of funding and human resources management. Since this project is a bottom-up project, there is no direct budget for platform development. We have now proven the feasibility of the project by using the outcomes of the test phase and we are now on the search to acquire funding. This project also needs a well-established network of collaborators to connect people, disseminate translations and promote the activities.

## Discussion

J. E. FORERO-ROMERO — UNIVERSIDAD DO LOS ANDES, COLUMBIA: It looks like most of the translation is text-based. What about sound-based translations? For instance, incases of languages without languages.

B. HIMMELFARB: Right, most of the work is text-based. However, there are plans to include multi-media matarial with help from a Master's program in France.

## References

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