

Final Report to the Office of Astronomy for Development

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Short Summary

Astronomia Periferica was embodied in three independent activities: "Satelistica", "Notebook Universe" and "Macrocosmos and Domestic Microcosmos". All these projects were satisfactorily completed. The activities were developed in three different peripheral neighborhoods in Bogotá: El Carmen, Belén and Cazucá.

Satelistica featured a laser robot that followed satellites over the sky together with visualizations and sonorizations.

Notebook Universe was done in two parts. The first was done in four sessions with different kinds of experiments on time, matter, space and light. It was developed in the Belén neighborhood.

Macrocosmos and Domestic Microcosmos was done in two sessions. This part featured the construction of an artistic installation with chairs that pointed towards the center of the Galaxy.

Extended Summary

The first milestone was the project webpage (<http://astronomia-periferica.org/>). It went online on January 2013. Most of the documentation (pictures and videos) is now posted to the website.

The first completed activity was "Satelistica" by Luis Bustamante on February 9, 2013. It took place at the "Casa de la Cultura" in El Carmen neighborhood in southern Bogotá. We had an attendance of 40+ people of all ages. Soon after the event, Luis published detailed instructions to build the robot that followed the path of satellites in the sky (<http://protonumerique.net/diy-tutorial-released>). A full release of all the software was also done (<https://github.com/Protonumerique/Satelistica>).

The second activity was "Notebook Universe". This time we moved to the Eastern part of Bogota. We partnered with "Casa B" (B-House), a new social and artistic space that opened its doors in 2011. Their goal is to join transformative processes in the Belen neighborhood, to help it in becoming a place with better opportunities for its 5000 inhabitants. We worked in company of art (Johanna Villamil, Marthin Rozo, Kelly Moctezuma) and physics (Nicolas Garavito) students from the National University in Bogota. In four Saturdays in April we performed a series of "Spatial Experiments" on the concepts of time, space, light and matter. All of them were inspired and adapted from different activities done in the Art School of the Berlin based contemporary artist Olafur Eliasson. His school has the name "Institute for Spatial Experiments" (Institut fuer Raumexperiment), from which we took the name for our activities. This time most of the attendees were children from the neighborhood (ages between 8 and 10 years), although few adults (including a couple of high-school science teacher) also took part. In total some 40+ people took part in the "Spatial Experiments".

The third completed activity was the second part of "Notebook Universe". This time we moved further South to a neighborhood (Cazuca) known by its violence issues. Cazuca is a destination for displaced people from the civil war in the rural areas in Colombia. The logistics were a lot more complicated in this case due to security issues. We had the fortune to work in partnership with the foundation "Tiempo de Juego" that uses sports to keep the children out of drug/crime/violence. We had planned four sessions at night, but only one was possible. The project was directed this time by two artists (Manuel Santana and Graciela Duarte). This intervention is a continuation of their 10 year long project "Echando Lapiz" which has focused so far on ecological themes. Further support was provided by Pilar Becerra, an expert in traditional astronomical outreach.

This time we meet with a group of 40+ people of all ages (from 8 to 80). We arrived around 6PM. Pilar presented video to the children about the different scales in the Universe (very similar to the spirit of the Universe Awareness (UNAWA) project). At this point we also started cooking potato soup to share during the cold night. After the introduction by Pilar we distributed notebooks, pencils, ink and pens. Our objective was to talk between us about what we thought it was "out there in space" and express it with drawings in the notebooks. Most people were very happy because it was an opportunity to step out of their routine, meet their neighbors and to be outside, something that is uncommon due to security issues. We left around 10PM with a happy feeling after building

community ties. We kept some of the notebooks to produce postcards with the drawings. Next year we will return the notebooks and distribute the postcards to the neighborhood.

The final milestone was the section Macrocosmos and Domestic Microcosmos. It was presented under the name “Astronomias Caseras” and developed in two small workshops. The main objective of the workshops was to make the participants think about the center of the Galaxy. The workshops were hosted by CasaB in the Belen neighborhood. The first day of the workshop we discussed about the analogies of the structure in the Solar System and the Milky Way. We told the participants (10+ children and adults around the neighborhood) that the center of our Galaxy was in the direction of the constellation of Sagittarius. Using the software planetarium we showed the participants that during this time of the year the center of the galaxy was approximately located behind the Sun. We briefly talked about the black hole in the center of the Galaxy. We asked all the participants to draw their version of the center of the Galaxy. We used this drawings to make small posters featuring their drawings with a sign of “Wanted: the center of the Galaxy” and the time and date for the second workshop.

During the second workshop we received during a period of 4 hours 20+ people that had seen the posters and wanted to see what was happening. In this opportunity we had ready an artistic installation that used chairs to point towards the Galactic center. Our objective was twofold: 1. To use household objects as astronomical instruments and 2. Get people thinking about the Galaxy. We received people and made brief explanations about the Galaxy, its center and its position, then we asked people to place the chairs towards the center of the Galaxy.

Pictures and videos

<http://astronomia-periferica.org/?p=226>

<http://astronomia-periferica.org/?p=208>

<http://astronomia-periferica.org/?p=194>

<http://astronomia-periferica.org/?p=111>

<http://astronomia-periferica.org/?p=170>

<http://astronomia-periferica.org/?p=240>

Objectives and Deliverables

Originally we had four major deliverables:

1. Visualization and sonorization activity (Satelística)
2. Two installed sculptures (Macrocosmos and domestic microcosmos)
3. 600 notebooks distributed (Notebook Universe)
4. Digital Publication documenting the process and outcomes.

The first deliverable was completely met (100%). The second deliverable was met to 50% because only one installation was done, although the two workshops were held. The third deliverable was met to 20%, roughly 100 notebooks were distributed in the participants of the 5 sessions of Notebook Universe. The fourth deliverable is met to 20% because we only have the digital documentation (pictures and video) of all projects. However, the final product is still under construction.

Challenges

There were three main challenges in the project:

1. The turnout for participants in the Notebook Universe was far lower than expected. In spite of a campaign to attract people, only +90 people attended, out of an original expectation of 600.
2. The security issues in one of the locations (Cazuca) made it very difficult to host the activities in Notebook Universe. At the end we could only host one (1) out of the four (4) planned workshops.
3. Alejandro Tamayo, the leader of 'Macrocosmos and domestic microcosmos' left the country to pursue his graduate studies. As a consequence we had to implement the workshops and artistic installation following his remote indications. The local support was then given by local artists.

Recommendations for increasing the impact of the project

1. Although increasing the number of participants in neighborhoods that traditionally do not host scientific and artistic activities is intrinsically challenging, the best strategy is the one we followed: working in partnership with other local organizations.
2. Planning is generally very difficult with community organizations in Bogotá. This might also be the case in other Latin-american countries. Sometimes events have to be cancelled last minute because of changes in the conditions to perform the actions (space availability, group availability). The best strategy is to have a wide time win-

dow available in order not to decrease the number of events if something unexpected happen.

Suggestions to expand the project to other parts of the world

Support the production of catalogs that document similar artistic actions. Facilitate its world-wide distribution.

Financial report

The detailed report can be found in the [budget-astro-periferica.pdf](#). All the receipts are under the gzipped file [receipts.tar.gz](#).

The green items in the budget correspond to transaction expenses in honoraries that haven't been made, but are expected to be done starting in 2014. That is why they do not have the corresponding invoice.

Regarding the budget, 250 Euro went into the webpage, 1350 Euro went to "Satelística", 590 Euro to the "Notebook Universe (Spatial Experiments)", 365 Euro to "Notebook Universe (Echando Lapiz)" and 300 Euro to "Macrocosmos and Domestic Microcosmos". We note that we haven't produced the digital publication documenting the project.

From the total budget we have 1038 Euro that were not spent. **We kindly request to use this amount of money to design and produce the bilingual digital publication (500 Euro) and design, print and send postcards from the activities in Notebook Universe (558 Euro).** If that is not possible we will make a bank transfer back to the OAD for the amount of 1038 Euro.