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Second star to the right: a cultural project connecting art, tourism, history and astronomy in Florence

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1. The project's background and rationale

1.1. The main partners

INAF (Italian National Institute for Astrophysics) is the main Italian research institution in Astrophysics, and has in its mission a strong commitment to public communication in Astronomy. Bas Bleu Illustration is a communication agency specialized in cultural and scientific dissemination that carries out communication projects with great care and aesthetical research. Bas Bleu usually collaborates with scientific institutions and thanks to its communicative code based on illustration and unconventional expressive research, often produces editorial projects for raising awareness or engaging people on scientific issues.

INAF and Bas Bleu Illustration had already carried out together science communication projects and, in 2015, had published a first guidebook for discovering astronomy in the city of Padua.

1.2. Italian artistic and scientific heritage and the role of the Arcetri Astrophysical Observatory

Italy has undoubtedly some of the most visited places in the world and since medieval times, through Renaissance and later, many major monuments are impressively connected to Astronomy. In all different epochs and by different rulers, Science was considered a most relevant part of the greatness and cultural identity of the cities.

Florence in particular is a UNESCO World Heritage site, cradle of art and literature, and not only has an extraordinary concentration of historical and artistic monuments, but also possesses a remarkable scientific and astronomical history. Florence has been home to very talented scientists (just to give some examples: Galileo Galilei, Evangelista Torricelli, Enrico Fermi) and explorers (Amerigo Vespucci) and hosts Museums and Institutions at the forefront of scientific research and culture. It is also rich in monuments that recall the history of astronomy.

For many years now, researchers of the Observatory (and other experts) have been carrying out studies on the astronomical aspects of the monuments, and also guided tours for the public, initiatives and events. Many school visits and activities have been carried out each year, e.g. involving students in the lookout of different sundials and clocks around the city, testifying the development of the measurement of time and the related cultural, religious and technical issues.

1.3. Second Star to the Right: an astronomical city-guide for discovering Florence

Aware of the interest shown by the people in these "astronomical approaches", we decided to bring to Florence the good practice of astro-tourism developed in the city of Padua (Zanazzi and Bacciotti, 2019): in fact, in 2015, the Observatory of Padua (belonging also to INAF) with Bas Bleu Illustration had published the first Padua astronomical guidebook (Benacchio et al, 2015). Since it has been a successful product (nearly 3,000 guides distributed), we decided to replicate it in Florence: it required that some criteria be adapted, because of the differences between the cities,

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but it led to the transformation of “Second star to the right” in an editorial series. In fact, after Padua and Florence, also a guide of Palermo will be published (expected in 2021). With the name “Firenze. Seconda stella a destra / Florence. Second star to the right” at the end of 2019 the astronomical city guide has been published (Zanazzi et al., 2019) and distributed in the bookshops of the region.

2. Projects' description

2.1. Scientific rigor, aesthetical design, accessible language: the balance for the guidebook.

We can decline history of science and archaeoastronomy communication activities as an opportunity to involve – even emotionally, through the beauty of artworks – different audiences that, thanks to an artistic and cultural approach, may become closer also to scientific issues.

In this framework the guide “Firenze. Second Star to the Right” has been designed and produced: on one side the deep research on scientific issues in order to accomplish the dissemination goal proper of a research institute like INAF; on the other side a communicative research aimed at choosing the proper tone of voice, the language, the graphic design and the balance between text and images. Every element of the book has been discussed and defined in order to reach a wider public, who might have no sectorial knowledge.



Figure 1 - The guide book cover



Figure 2 - One page of "Firenze. Seconda stella a destra" guide book

The aim of the guidebook is to re-discover the signs of the profound relationship that once existed between man and the sky, and to involve citizens and tourists in searching for a scientific perspective, rediscovering this aspect too, in an easy, accessible way. The guide proposes thematic itineraries studied *ad hoc* and tested so that they are relevant from the point of view of astro-tourist content and easily understandable to everybody. Walking through the historical city center, the public is intrigued and accompanied to discover sundials, meridian lines, mechanical clocks, zodiacs, painted skies and constellations, ancient geographical maps, places linked to scientists such as Galileo Galilei, to great explorers such as Amerigo Vespucci. Masterpieces of art that hold "astronomical secrets", instruments of ancient fascination that undoubtedly reveal the importance that the study of the sky and its movements has always had for humankind. The selection of the places took into account the scientific value of the astronomical elements, as well the cultural interest of the places where astronomical elements are located: the guide in fact wants to be a good experience for visitors and for this reason needs to find a balance between science value and pleasure.

Also, the book combines texts and images in order to reach a pleasant tone of voice, without sectorial lexicon or bureaucratic approach. The guidebook contains simple explanations, historical context information and also curiosities and traditions: the continuous balance between the parts guarantees a good rhythm to the book maintaining a useful approach. As it happens for all guidebooks, “Seconda Stella a destra” is a pocket guide, easy to read while walking along the streets of Florence.

Moreover, it has been graphically designed in every page, both for a useful experience (it contains three different routes represented in different colours) and for an aesthetical experience.

2.2. *The map.*

The guidebook is accompanied by a map, in Italian and English, double-sided; it has the graphic



map on one side (Fig. 3), with the monuments and places reported in different colours depending on the itinerary that they better fit in (green for “Time measurement”, purple for Galileo related places, yellow for earth and sky maps and representations) and short texts on the other side, briefly describing the places of the itineraries and photos. The map is detachable so that it can be used independently. It has been designed and illustrated especially for the project and may be distributed independently. In the case of the map, the main work was to provide a good synthesis in order to describe in few lines every “astronomical place”.

Figure 3 – Map – front side

2.3 *Walking tours, public events, engagement activities*

The publishing project was designed from the very beginning to be accompanied and enhanced by a series of activities for citizens. Among them:

- Guided tours for adults and families;
- Thematic workshops for children related to the places of the guide;
- Informative conferences for disseminating knowledge about astronomical issues and astronomical Florence places;
- Public events and public engagement activities developed on the field in collaboration with the various institution involved.

The last point was particularly interesting and challenging: and we consider it as another great strength of the project. In fact it contributed to enhance the relations at the local level between the Observatory and scientific and cultural bodies and institutions located in Florence: research bodies, universities, museums, Superintendence, institutions that manage churches and religious structures, tourism agents and institutions, public authorities (Municipality, the Regional Government), tourist guide associations: literally bringing together different actors and skills in a useful dialogue.

3. *Impact and future*

The impact of this project is on different fields: networking and institutional relations in particular with stakeholders in the territory; visibility for the Italian Institute for Astrophysics; economical return from the sale of the books in bookshops; engagement of civil society and youngsters in astronomy.

Networking with Florence institutions triggered a fruitful dialogue and a collaborative relationship that contributed to show the role of a research centre as INAF in the promotion of culture. These relations can be considered a value that may be important also for future synergies and projects.

We expect in the future years, that the guidebook series may be extended to other observatory sites of the National Institute of Astrophysics, which is present in 13 major Italian cities. The Palermo guidebook will be published soon, by the end of 2021 and other cities 'guides may come later. An internal INAF working-group has been set up, dealing with astro-tourism and sharing initiatives to promote astro-tourism in Italy.

These activities, already planned, have been blocked by the lock-down due to the COVID 19 pandemic, but will certainly be rescheduled as soon as possible in compliance with the distancing rules.

Future developments of the astro-tourism project in Florence may include the involvement of different audiences. For example, by creating, in addition to the guidebook for adults, another one specifically for kids (like already done in Padua, with the publishing in 2017 of the illustrated guide for kids "Padova a testa in su" (Benacchio et al., 2017). A carefully illustrated book written in a suitable language and with proposals for experiments and for building simple tools to understand "hands on" some of the themes dealt with (e.g. building a simple sundial); and providing walks for families or - to give an example - an astronomy treasure hunt in the city: events aimed at a specific public. There could also be "theatrical" visits, training events for tourist guides; events aimed at specific audiences, organised in collaboration with each cultural body in the area.

In the future, at an international level, "scientific-astronomical" experiential tourism may be an important lever for development, even of disadvantaged communities; some projects for the promotion of scientific tourism promoted by the Office of Astronomy for Development of the International Astronomical Union (e.g. in Ladakh in the Himalayas) already explore the theme, even if they address an "amateur astronomy" public. On the basis of the experience of the Italian pilot project, we will be able to propose to the international community (IAU) forms of "widespread" experiential tourism in the cities as well.

And looking at the future of science communication, we really hope that such cross-cultural projects can be more frequent in order to help the engagement of society in science: the role played by art, culture and beauty in enlarging the audience may be really important and contribute to reach also that part of the society that wouldn't take part in more traditional science activities. For succeeding in this way, it is requested now more than ever to build partnerships between different actors.

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