

The Astronomical guide of Palermo: an example of Astro tourism at the INAF – Palermo Observatory

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Introduction

This contribution aims to present the experience that is currently taking place at the INAF - Palermo Astronomical Observatory in the field of Astro-tourism: the publishing of an astronomical guide of Palermo, the third of the series “Second Star to the Right and Straight On!”, after the ones of Padua and Florence, all published by the Italian National Institute of Astronomy and Bas Bleu Illustration.

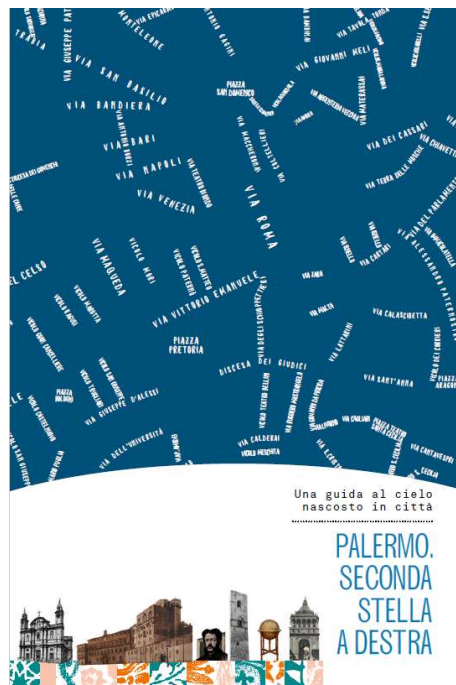


Figure 1 - The cover of the guide of Palermo

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This guide is a mean to communicate astronomy through different points of view, such as art and history, in connection with the evolving needs of the society during the time. The publication of the guide of Palermo is based on more than 30 years of research in the field of cultural astronomy, and in particular on themes related on the measurement of time, of a scientific consultant, professor Maria Luisa Tuscano, and on the public engagement skills for communicating science of the agency Bas Bleu Illustration.

The guide outlines five itineraries, starting from the sea and going through the historic city center, reaching the Royal Palace, among the top of which the Astronomical Observatory is located. Using the guide, tourists could discover several places in Palermo connected to astronomy with a scientific, historical and cultural value. In Palermo, astronomy has been everywhere, since ancient times, in monuments, frescoes, statues, paintings, historical buildings, sundials and decorations. These elements reveal the fundamental role that sky has always played in human life and the importance of astronomy in the life of the city, and testify the deep connection between science and art. Tourists and citizens could discover new details even in famous and well-known places, when looking at them from a different point of view.

Differently from the other two guides published before, the Palermo's one is going to be equipped with some ICT (Information Communication Technologies) devices, like Augmented Reality (AR), to allow open-access to additional resources and updated information thanks to the use of an interactive mobile app. ICT such as augmented reality and Virtual Reality (VR) are powerful ways to reach new generations, that are accustomed to interacting with screens and multimedia. These innovative tools can also offer new learning opportunities, giving access to digital contents that may encourage users to deepen topics.

Into the guide

Astronomical tourism does not only mean the valorization of rural areas by exploiting the resource of a starry sky, or the enhancement of ancient astronomically oriented places. Astronomical tourism in the historic center of Italian cities means a kind of cultural tourism to “experience astronomy” and its role throughout the time in the life of a city, discovering places, artistic elements and architectural structures somehow linked to the science or the sky.

In the last years INAF (Istituto Nazionale di Astrofisica), the Italian public body in charge of performing research in all the Astrophysics and Space Physic domains and promoting it worldwide, has experimented some initiatives in the field of astro-tourism. In particular, the project “Second Star to the Right and Straight On!”, in collaboration with Bas Bleu Illustrations is a cultural project connecting astronomy, art, tourism, history and society and using new communication “means” to engage different audiences with various interests: guidebooks, maps, events, virtual and augmented reality enhancements, peculiar graphic elements.



Figure 2 – An astronomical tour of Palermo: the meridian line in the cathedral

“Palermo. Second Star to the Right and Straight On!”, is a guide for those who want to discover the city with a scientific eye or just learn more about this unique city. Sky sometimes hides under a porch, inside a church, on the facade of a palace. Hidden in our cities we discover watches, sundials, sculptures that tell a story about the sky and its importance. In Palermo, it’s possible to discover astronomical traces scattered through the streets. These elements testify how much science and how much culture has been and is currently created in Palermo, reflecting the ongoing progress in sky science which has revolutionized our way of thinking and has contributed to the enhancement of society for its practical aims - such as time measurement, the applications to agriculture and navigation, technologies development. Many of these elements were designed for public utility and to meet the needs of the society of the time.

We identified five itineraries:

1. “Piano della Marina” (tran. The waterfront). The guide starts from the sea and Porta Felice (Fig.1) - an old entrance to the city overlooking the sea – to show beautiful palaces and churches revealing astronomical details.
2. “Dalla Natura alla Scienza” (tran. From Nature to Science). The itinerary makes visitors discover the science of the sky inside gardens, scientific laboratories and museums of the University of Palermo.
3. “Il cuore della città” (tran. The heart of the city). This itinerary starts from the ancient heart of Palermo where everything could happen. Visitors can have a taste of ancient symbolism looking at the four corners - always enlightened by the sun - that decorates this point of the city to see kings, saints and the four season’s representations.
4. “Tra teatri e mercati” (tran. Between theatres and markets). People can discover astronomy inside a theater or trying to catch a glimpse of a star through a street full of stalls with fruits and vegetables.
5. “Palermo Normanna” (tran. Norman era Palermo). At the end visitors can reach the Norman Palace that is also the place where to find the Palermo Astronomical Observatory, on the top of a medieval tower named as Santa Ninfa’s tower or Pisan tower.

Thanks to this guide, tourists will have the opportunity to explore Palermo under a different perspective, while following these astronomical itineraries of the city, which underline not only that

astronomy has always inspired art with its beauty, but also its impact on culture, society, religion, art, history and on other sciences.



Figure 2 - On summer solstice the sun rises from the sea, exactly in the middle of Porta Felice.
Credits: Francesco Rotolo

During the pandemic – in the last edition of the European Researchers' Night 2020 – it was broadcasted a preview of one of the itineraries of the Palermo's guide through a "virtual astronomical walk" (Fig. 2) using StreamYard, iMovie and graphics elements to make it interactive. People could select the place they wanted to go and visited it under the guide of an expert researcher.

The itinerary selected to be presented was "Dalla Natura alla Scienza" (tran. From Nature to Science). The feedback for this cultural experience was absolutely enthusiastic.



Figure 3 - The interactive menu of the virtual astronomical tour.
Graphics elements made by Laura Leonardi.

Thus, the next challenge for the project is to develop some AR/VR contents to improve the visitor experience with: video and audio insights and explanations, animated 3D models, which appear on-demand on the pages of the guide, as in an innovative pop-up book, further scientific contents and experiments that couldn't have space in the guide, website links with updated information.

Furthermore, to allow a friendly exploration of the itineraries, we are also experimenting with location-based AR applications which use the position tracking of mobile phones to enrich the user cultural experience, offering him/her additional visual information in the outdoor environment and unlocking some audio contents.

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