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E LUCEVAN LE STELLE: ENGAGING THE PUBLIC OF ROME IN A CULTURAL REPOSSESSION OF THE URBAN SKY

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ABSTRACT

During the Summer of 2016, the Planetarium of Rome organized a successful and innovative public observing event: E Lucevan le Stelle. Intended to revamp the attention for the local Planetarium and Astronomical Museum – closed since 4 years for renovation works – the event was a call to citizens and amateurs to join the Planetarium astronomers at 8 different locations in the city with their own telescopes for free stargazing sessions, like a diffuse urban star party. Each place was selected in relation to an astronomical theme, with “guided tours” to the evening sky narrated by the Planetarium astronomers, illustrating the cultural relevance of each location with reference to the history of astronomy in Rome.

By connecting the squares and the parks used as observing spots, the circuit of E Lucevan le Stelle invited the public to create a new constellation over Rome and name it. Inspired by the historic effort of Pope Sixtus V, who traced the streets around the Basilica of S. Maria Maggiore in the shape of a star, and by other astronomical readings of the network of churches and landmarks, the goal of this event was to bring to light the ancient connections between Rome and the stars, in the spirit of the European Year of Cultural Heritage. By switching off the main lights at each location, the project aimed at encouraging a direct participation to a collective repossession of the urban sky. The overall attendance to the event was estimated to be approximately 7000 people.

KEYWORDS: Astronomy, Communication of science, Planetarium, Rome, Star Party, Public Outreach, Cultural Heritage.

1. INTRODUCTION

The Planetarium of Rome is one of the oldest Planetaria in the world: opened in 1928, it was the first planetarium outside of the German-speaking region (Firebrace, 2017). Its history of almost 90 years, however, was quite a troubled one: the Planetarium was shut down several times, including an impressive 23 year continuous stop (1981–2004) when Rome remained the only European capital city without a planetarium.

As history often repeats itself, a new and unexpected shut down occurred in 2014, less than 10 years after the reopening of the Planetarium and the new Astronomical Museum at a different location – the Museum of Roman Civilization in the Eur district; the reason for closing being renovation works needed primarily by the neighboring Museum. Yet those works have begun only in 2017, and will continue at least for a couple of years before the site will finally be reopened.

In order to revamp the attention of the public for the Planetarium, whose activity is suffering from an undeserved oblivion, in 2016 the Counsellor for Cultural Growth of the Municipality of Rome asked the Planetarium staff to create an event to be held during the summer, inviting people in Rome to explore the night sky and observe the stars. This event would be part of the cultural offer of the Roman Summer, and was intended as a sign of attention for the Planetarium by the Municipality, a first move toward its reopening.

Working on this remarkable input, we chose to combine entertainment with culture and the history of Rome, adding value to the event in terms of Cultural Heritage promotion and fruition, as described by the guidelines of the European Year of Cultural Heritage 2018¹. The purpose was to aim for “culture beyond the event”, as reviewed in Romano *et al.* (2009), for other major events organized in Rome. The innovative format for the event was conceived with no educational goal, however it was based on the outcomes of previous visitor studies on the mixed public visiting the Planetarium of Rome in the summertime (Giovanardi *et al.*, 2010).

This was the genesis of E Lucevan le Stelle², a series of 8 public astronomical observing sessions dislocated in different areas of the city over the months of August and September 2016, in order to reach out to different layers of the public: Roman citizens living in different parts of Rome, tourists from Italy

and abroad, amateur astronomers, students, children and their families (Figure 1).



Figure 1. The promotion banner of the event E Lucevan le Stelle.

2. ADAPTING THE STAR PARTY FORMAT TO A CULTURAL HERITAGE PROJECT

Named after a famous aria from Puccini’s *Tosca*, E Lucevan le Stelle was conceived in the format of a diffuse urban star party. A choice that is coherent with the previous activity of the Planetarium of Rome: since 2009 it revisited the popular concept of the star party, typically a gathering of telescopes and amateur astronomers taking place as far away as possible from city lights, by bringing it back into the city regardless of the limits imposed by the sumptuous light pollution of Rome. The underlying idea is to encourage people to make eye contact again with the starry sky even inside the city, because it still holds a cultural value for everybody, although it is not so starry any longer.

Thus for 6 years (2010–2016, with a break in 2014) the Planetarium hosted the Rome Star Party, ironically named “For a fistful of stars”, an event that used to attract dozens of telescopes and several hundred participants: a clear proof of how appropriate was the intuition of not discarding the city sky as a target of observation just because it is devastated by the glare of urban lights. Instead, the Rome Star Party became an ideal occasion to raise and spread an awareness about the problem of light pollution, and invite people to stand up against it in concrete ways. In fact, a correct use of artificial illumination would be crucial to enjoy several historical and archaeological landmarks of Rome, featured in the UNESCO World Heritage List³, together with the night sky, that is also protected by UNESCO as astronomical heritage⁴.

¹ http://europa.eu/cultural-heritage/about_en

² www.planetarioroma.it/mostre_ed_eventi/programma_degli_spettacoli/e_lucevan_le_stelle

³ <https://whc.unesco.org/en/list/91>

⁴ <https://www3.astronomicalheritage.net/index.php>

3. EIGHT BRIDGES TOWARDS THE SKY

A natural evolution of our approach to involving the public in stargazing (described in Gandolfi et al., 2005), seeking to valorize the depleted sky of Rome, was then the creation of a itinerant star party, as if the astronomers – and their telescopes – were going on tour, touching different parks and squares of Rome to gather with anyone interested to join in and have a look at the stars. Thus we selected eight separate locations scattered across the urban area, from the very center of Rome to farther suburban places. We scheduled the calendar of the events over the months of August and September 2016, and associated to each date an astronomical theme, chosen according to the historical references given by the location itself, or by the occurrence of celestial events such as the visibility of certain stars or planets and ultimately by the celebration of international events like the European Researchers Night.

The full calendar of E Lucevan le Stelle resulted as follows (date, place and title are indicated):

1. August 8 – Piazza del Campidoglio
Roma Caput Coeli: the historical astronomical observatories of Rome
2. August 9 – Janiculum Terrace
Galileo in Rome: from the observations of the moons of Jupiter to the Juno mission
3. August 10 – Pincio Terrace
The tears of St. Lawrence: when the stars are falling down
4. August 22 – Piazza Navona
Water on Earth and on other worlds: from the Rivers fountain to extrasolar planets
5. September 10 – Villa Torlonia
Stars and constellations, from the Planetarium to the sky
6. September 14 – Villa Carpegna
The Moon, 47 years after Apollo 11
7. September 23 – Villa Lais
On the birthday of Augustus, the sky of the Fall equinox
8. September 30 – Schuster Park
Modern astrophysics in the European Researchers Night

Each of these dates and themes suggests an interesting reason to look at the sky; the astronomers of the Planetarium gave short lectures under the sky – better defined as “guided tours of the night sky” – using laser pointers and tablets equipped with a sky map application to illustrate the constellations and the main stars visible by the naked eye and through the telescopes, in connection with the chosen themes. The goal of those guided tours was to frame the con-

tents of the observations within a broader perception of their cultural value (i.e.: Jupiter with its moons from the Janiculum, where Galileo observed it himself in 1611 and while the Juno probe is exploring the planet; or the pale light of the stars 51 Pegasi and HD189733 as the suns of extrasolar planets where water has been found, from Piazza Navona, next to the Rivers fountain and not far from the statue of Giordano Bruno). Following the definition by Griswold (2013) of culture and society as reciprocal mirrors within the cultural diamond, these are all attempts to operate as producers of a cultural object – the act of an astronomical observation through a telescope, shared by a large group of receivers – that goes beyond pure aesthetics, yet it exploits the enchantment of the moment to attribute a specific meaning to the act itself, connected with the promotion of Rome’s historical and cultural heritage. Ultimately, this responds to a fundamental task of the Planetarium’s mission: sharing astronomy with the public not as a notion but as a live experience reconnected to popular culture.

4. A NEW CONSTELLATION FOR ROME

The whole scheme of the eight observing sessions was in turn framed within the underlying concept of E Lucevan le Stelle: focusing the attention of the public to the relationships between Rome and the sky, from ancient history to current research. Perhaps the most outstanding historic reference is found in the effort by Pope Sixtus V to re-shape the street system around the Basilica of S. Maria Maggiore – one of the four major churches in Rome – in the shape of a star (“in forma sideris”), as shown in Figure 2, as it is well documented by Bordini (1588).

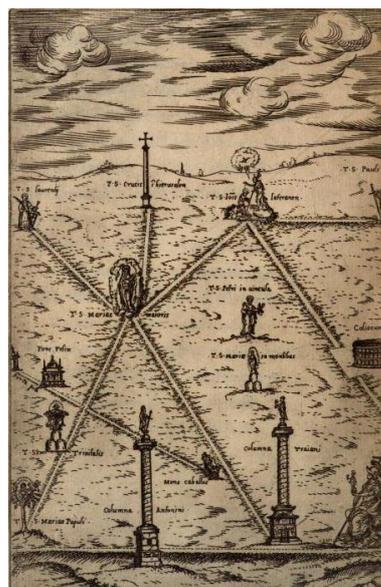


Figure 2. The street plan around the Basilica of St. Maria Maggiore “in forma sideris” by G. F. Bordini (1588).

Further astronomical descriptions of the network of churches and other landmarks of Rome have been proposed, although their authenticity is questionable. It can notably be mentioned a pattern created by seven churches resembling the Big Dipper, including St. Peter's Basilica, S. Maria del Popolo, Trinità dei Monti, S. Maria Maggiore, S. Giovanni in Laterano, S. Croce in Gerusalemme and S. Lorenzo al Verano (Chirri *et al.*, 2016).

Whether that is real or not, we played with the idea of using the eight locations of E Lucevan le Stel-

le as "stars" drawn on the map of Rome, to engage the public in a social game linked to the event: create a new constellation over Rome and give it a name. This game had the purpose of spreading the voice about E Lucevan le Stelle on the social networks, notably Twitter in association with the hashtag #elucevanlestelle. Everyone was invited to post the drawings of their constellations online, and a selection of the most interesting ones were published on the Planetarium newsletter (Figure 3).

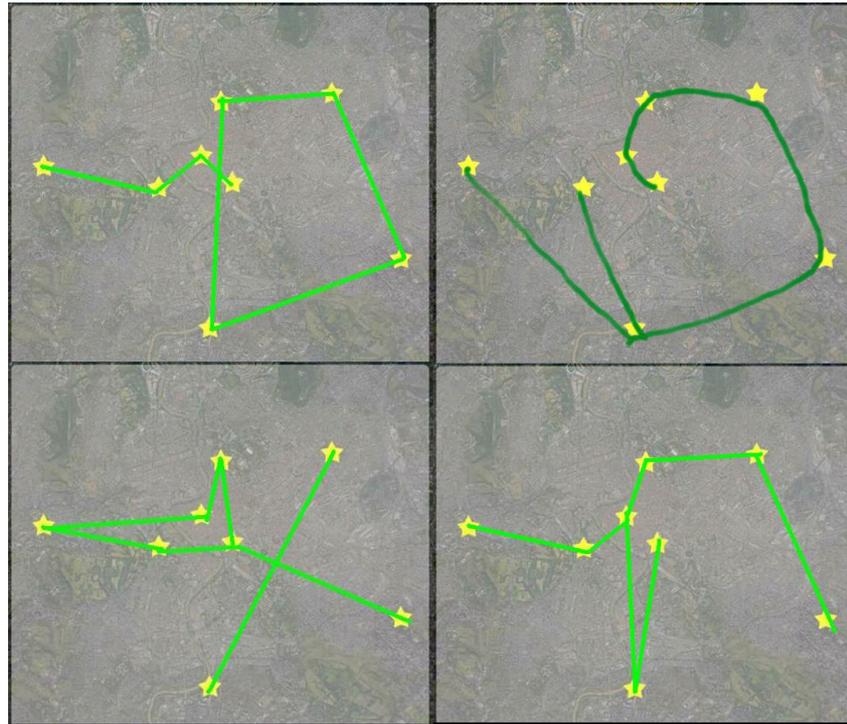


Figure 3. Some constellations proposed by the participants to E Lucevan le Stelle, based on the locations of the event: the Kite, the Snail, the Sparrow and the Elephant.

The overall attendance to E Lucevan le Stelle was approximately 7000 people. Since the events were free, there were no ticket counts available to know the exact number of participants to each session, thus the figures are rough estimates. Nevertheless, there has been a remarkable spread in the number of participants between different dates, partly due to the centrality of the location, partly to the weather conditions and partly to the appeal of the theme. In fact, the most popular date was by far August 10 (Figure 4), known in Italy as the Night of St. Lawrence and strongly associated with the shower of the Perseid meteors (dubbed "the tears of St. Lawrence"): the turnout for that evening alone was estimated about 3000 participants. On the opposite side,

the observations scheduled for September 10 at Villa Torlonia had to be cancelled because of bad weather. In general, the four dates in August registered a larger attendance because they were located in very central squares of Rome and benefited from warmer temperatures; the remaining four September dates were based inside urban parks but attracted a lower number of people, due to colder temperatures and regardless of the fact that they offered somewhat better observing conditions. Considering the huge success of E Lucevan le Stelle, the Municipality asked for a supplementary date to be held at one more suburban location (Tor Bella Monaca): it was planned for 8th October 2016, but was canceled because of the cloudy sky.



Figure 4. A guided tour of the night sky during the observing session of August 10, 2016 at the Pincio Terrace. Note the public street lamps switched off for the event. (Photo by F. Barbati).

5. "OPEN SPACE" PLANETARIUM

E Lucevan le Stelle did not mark the first time that the activity of the Planetarium of Rome was organized outside of the dome. Over the years there were several important occasions for astronomical public events to be set up in external locations, that acquired a specific meaning precisely because of their connection to the site.

Besides the already mentioned Rome Star Party, that usually took place in the large square before the entrance to the Planetarium at the Museum of Roman Civilization and was still connected to simultaneous planetarium shows, it is relevant to note that the exportation of astronomical events from the planetarium to other venues (theaters, schools, auditoriums etc.) had started early since the opening of the Planetarium in 2004: it is a natural consequence of the staff approach to communicating science, constantly seeking contaminations with other cultural values, a well defined feature of our productions that goes under the metaphoric label "cupola convessa", or the convex dome.

Among other events organized by the Planetarium astronomers over the years taking place under the city sky, it is especially poignant to remind *Infiniti Soli, Innumerabili Mondi* (Infinite suns, countless worlds), dedicated to the discovery of extrasolar planets: it was staged in 2009 for the International Year of Astronomy in Campo dei Fiori below the statue of Giordano Bruno. The event included a real time observation of the transit of an exoplanet (TrES-3b) in front of its host star, using a telescope set up next to the statue, to share the resulting lightcurve with about 1000 people who attended the event.

Again in 2011 we presented, in partnership with the American Academy in Rome, *Una Filosofica Ragunata* (A philosophical gathering) to celebrate the 400th anniversary of Galileo's visit to Rome to present his telescope. The event was located on the Janiculum hill, on the very same grounds where Galileo made his presentation (now within the premises of the Academy): with a replica of the same instrument we showed visitors the Moon and a few objects that shone also in Galileo's sky, 400 years before.

Now temporarily without a dome, the Planetarium needs to push in this direction to maintain its contact with the public by looking for other spaces: the format of E Lucevan le Stelle represents an inversion in the relationship between the (closed) Planetarium and the city, modulating its cultural offer in a diffuse, or "open space", fashion. On this respect, E Lucevan le Stelle has been the most remarkable experiment in migrating outside of the dome to meet the public in the open air.

6. ASTRONOMICAL STORYTELLING IN THE OPEN AIR

There are a few interesting consequences of delivering a message about astronomy in an open environment: it is so different from the protective dome of a planetarium that it radically changes the nature of the contact with the public. Besides the obvious limits imposed by light pollution, surrounding noises and obstruction by buildings and trees, performing astronomical communication in the open air provides stimulating perspectives for scientific storytelling. In the first place, the speaker does not have any control over the aspect of the sky, or on the flow

of time as inside a planetarium, but needs to rely on the actual sky and what it shows at the present time.

This strongly influences the narration of what is happening in the heavens, as it forces to keep up with the actual pace of celestial events, like the rising of the Moon or the setting of a planet – including the “special effects”, like the unexpected flash of a real shooting star, or a predictable bright pass of the International Space Station (during the dates of E Lucevan le Stelle the ISS made multiple shiny passes overhead and became a treat for viewers). Hence a special attention is required when composing the observing plan - going side by side with the narrative plot -, in order to choose certain visible objects that allow to create a link to the selected theme of the session⁵.

Instead of considering this a restriction of the “superpowers” of an astronomer working in a planetarium (i.e. the freedom to disregard any space and time constraints), working under the real sky as in the eight sessions of E Lucevan le Stelle opens up the way to a new approach to astronomical storytelling, that due to a tight connection with the surrounding environment resumes the cultural value of the urban sky and becomes very effective in engaging the public in a direct and personal repossession of the sky of Rome – or of any other place.

The huge turnout of participants – with and without their own telescopes – to the public observing nights of E Lucevan le Stelle clearly shows that citizens from all backgrounds responded with genuine enthusiasm to the invitation of the Planetarium of Rome, and despite the high levels of light pollution the old sky of Rome could be regarded again as something worth sharing with a large local community.

May that be a good omen toward the reopening of the Planetarium dome, possibly sometime next year, where all the stories of the sky will once again find their own home.

⁵ One of the authors (S. Giovanardi) had been experimenting for years with the open air communication style, by conducting a series of astronomical “starwalks” through Rome since 2011: in partnership with a touristic guide he drew dozens of thematic itineraries touching historical sites all over the city, often reminiscent of the history of astronomy. In the “starwalk” format, the commented walk leads to an observing spot – located in the darkest nearby area available – where participants continue their exploration by watching the stars through a telescope, guided by an astronomer. The project “Starwalks in Rome” aims at creating a network of links between the city and the sky, in the spirit of casting cultural bridges that allow the public to reconnect with the superior as well as with the inferior half of the panorama.

7. CONCLUSIONS

E Lucevan le Stelle was conceived without any educational or pedagogical goal. It simply was intended as a public outreach project, gauged with a specific attention toward going beyond pure scientific entertainment, in order to promote the historical and cultural heritage of Rome. As such, this event taught us a few interesting lessons worth sharing with the community of science communicators, concerning the cultural approach to communicating astronomy with the public.

The format of a diffuse urban star party adapts so well to the complex reality of a city like Rome that it might be replicated every year; on the other hand the connections between the archaeology and the history of Rome with astronomy are so abundant and diverse – from ancient times to the present – that they would easily offer valuable material, just waiting to be brought to light in terms of promotion of Cultural Heritage.

It would be possible to create a different calendar of itinerant observations every year, developing different astronomical themes and connecting each time new locations among the many squares, parks, panoramic points and historic buildings of the city.

The formula of E Lucevan le Stelle is quite flexible and offers the possibility of realizing a wide public event at very low costs: they are basically reduced to transporting the telescopes to the observing spots and to temporarily switching off the surrounding public lights.

Ultimately, a periodic public event like E Lucevan le Stelle would qualify as a new tourist attraction for Rome, helping the Eternal City to enter – in connection with the network of museums and archaeological sites and despite the level of light pollution – among the destinations of astro-tourism, an emerging share of touristic activities worldwide (Fayos-Solá *et al.*, 2014).

Besides its Roman location, the format of E Lucevan le Stelle could be exported to any other place, especially big cities with a relevant astronomical heritage although suffering from light pollution. Thus we encourage other planetariums, astronomical observatories, universities and research institutes active in public outreach to use this format, with all the suitable adjustments to their local reality, to create popular events engaging communities everywhere in a cultural repossession of the urban sky.

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