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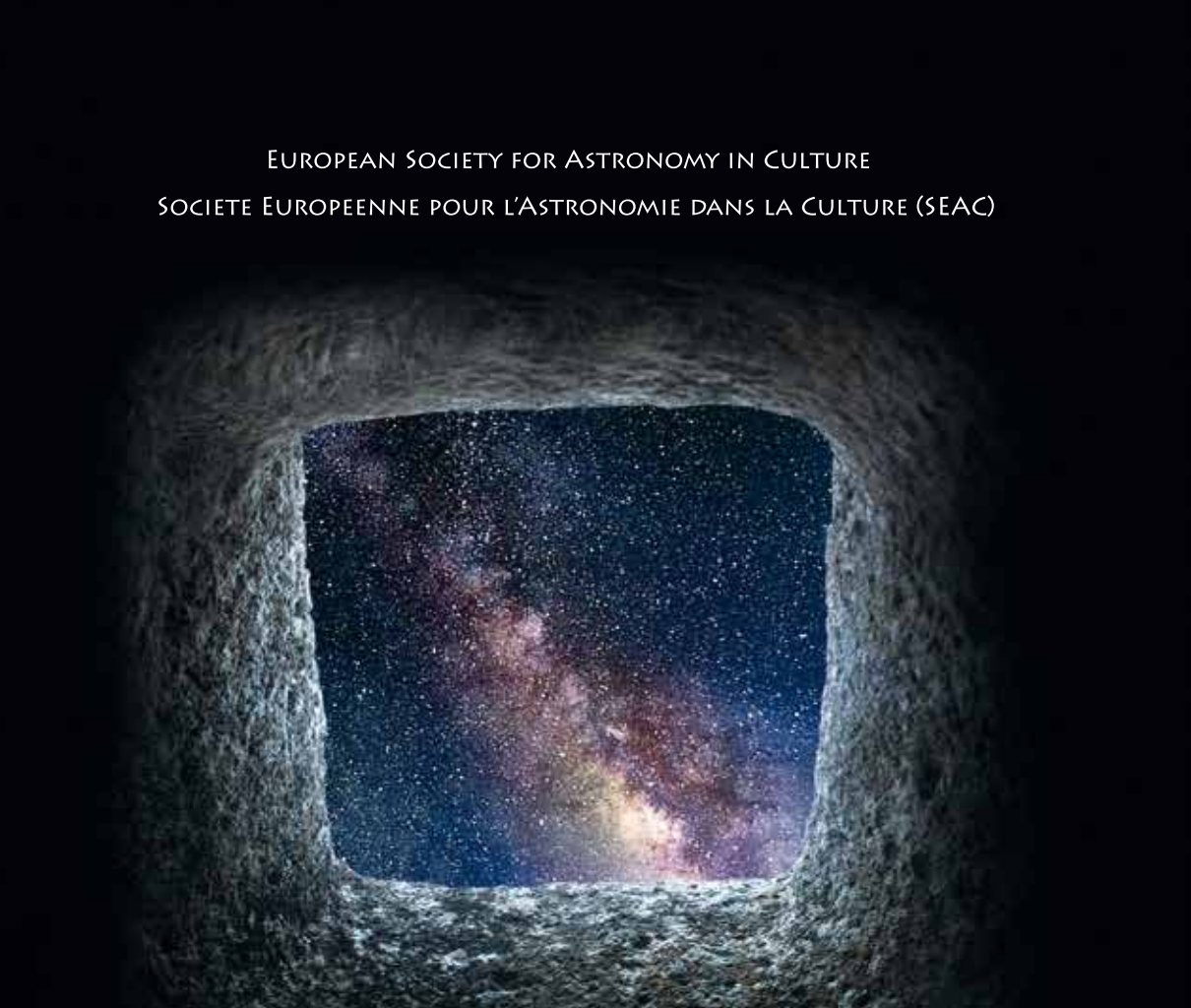

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PAINTING THE ANCIENT ASTRONOMERS. AN ICONOGRAPHICAL INVESTIGATION OF THE BAROQUE PICTORIAL CYCLE OF THE HISTORY OF ASTRONOMY IN PALAZZO PATRIZI-MONTORO IN ROME

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Abstract: We present an iconographical study of the largely unpublished pictorial cycle of the History of Astronomy in the roman Palazzo Patrizi-Montoro, dated about 1700. The work is unprecedented in its range and scopes and constitutes the decoration of the hitherto unknown observatory of the artists- astronomers Mariano and Francesco Felice Patrizi, active during the pontificate of Innocens XII and Clemens XI. The sequence of eighteen large-format paintings, complemented by four single herms carrying astronomical attributes, is presently preserved in the original Atelier-Specola of the attic of the building and in the second floor where some canvases have been moved, with the exception of a painting (recovered on an old photographic plate) and a herm, that appear to be missing. A large celestial planisphere painted on a ceiling of the attic and some astronomical instruments are also surviving. The cycle features 85 historical episodes since the first century BC to the XVII century AD, some explained with a short textual description, but the majority associated only to a year, often imprecise or plainly wrong. We propose identifications for a number of antiquarian architectural settings and a general discussion of the iconographic themes represented. Furthermore, we show some interesting visual evidences of an influence by the astronomer and proto-archeologist Francesco Bianchini, at the time superintendent of the Roman Antiquities for Clement XI.

Keywords: History of Astronomy, Art, Baroque Science, Chronology, Francesco Bianchini, post-Galilean Rome

Introduction

Unknown to scholars except for sporadic and fleeting citations, the late Baroque attic of Palazzo Patrizi-Montoro in Rome holds a real unicum in the history of art: an extensive cycle dedicated to the History of Astronomy, conceived by two clever and erudite amateurs in the scenario of post-Galilean Rome (Michel, 1984; Pedrocchi, 2000). It is composed of 18 paintings, which are evidence of the presence of an atelier-laboratory of great interest for understanding the scientific environment of the city at the threshold of Enlightenment. The last floor of the palace and its terrace were a sort of Astronomical Observatory-Artistic workshop, devised by Mariano and Francesco Felice Patrizi around 1700 and unknown until now. It is not a coincidence that the rich collection of the Patrizi family included, in addition to a first-rate picture gallery, also some interesting scientific instruments still to be studied.

After a short historical survey of the family and the palace, we will briefly describe the cycle, its style and its arrangement within the attic rooms (rooms A, B and C), classifying the iconographic themes. Finally we will explore the inspirational role of the astronomer and superintendent to Rome Antiquities Francesco Bianchini in the paintings, showing some evidences of his influence in the visual language adopted and in the choice of particular vignettes and historical episodes.

In the future, we plan to start a more systematic archive research and a complete iconographic analysis, trying to bring to light the private and non-academic dimension of eighteenth-century astronomy in the capital, well present in the salons of intellectuals alongside the usual artistic and antiquarian interests. The Patrizi brothers were in fact prominent personalities of the Roman nobility: they belonged to the world of the local Academies and moved in an environment adjacent to the papal court, composed of literary academies and small observatories. Here in the first half of the XVIII century collaborated scholars such as Francesco Bianchini and Giuseppe Ponteo, artisans such as Giuseppe Campani and ecclesiastic-scientists such as François Jacquier and Thomas Le Seur of the Trinità dei Monti convent.

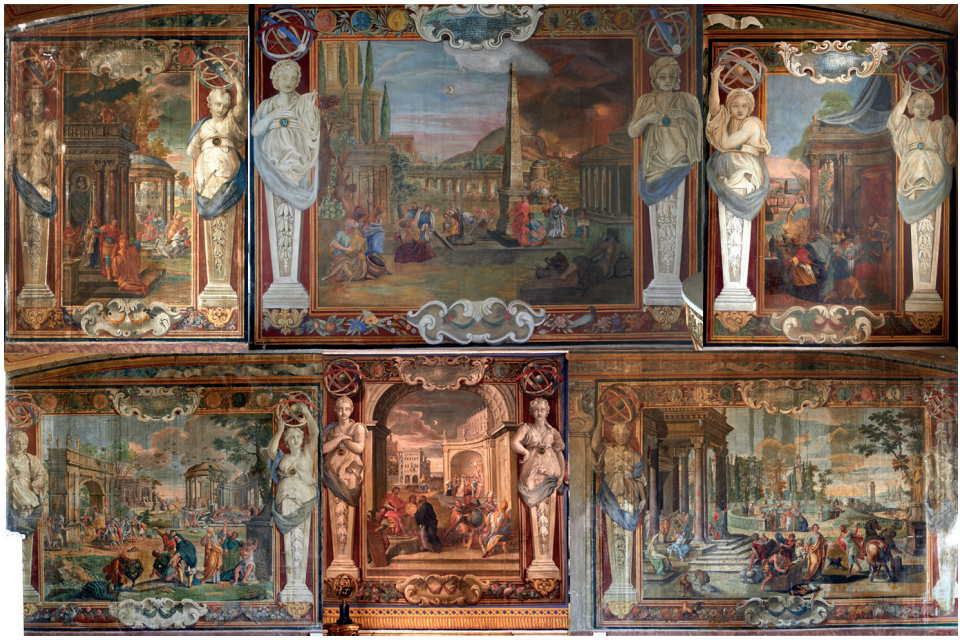

Fig. 1. Palazzo Patrizi-Montoro. Cycle of the History of Astronomy. The paintings of Room A (photo G. Masi).

The Patrizi Family

The Patrizi family has Sienese origins, dating back to the XIII century. The first traces of the Patrizi in Rome can be found in the XV century, but only in the following century, they take up permanent residence in the city with Dominus Arcangelus Patritius de Senis, a consistorial lawyer. Patrizio Patrizi _was an influential figure in XVI century Rome, very close to San Filippo Neri, who, together with his wife Pentesilea, lived in Piazza Sant'Eustachio. His son Solderio bought the Palace in Piazza Mattei in 1598, but sold it to the Costaguti family in 1624 and successively lost it because of the financial collapse of the family (Wasserman, 1968).

The Patrizi came again to the fore thanks to the marriage of Patrizio Patrizi and Virginia Corsini in 1649. The couple had seven children: two girls and five boys. The eldest was named Costanzo, followed by three younger brothers, namely Filippo, Mariano and Francesco Felice, never married, as usual for the cadets of a noble family.

The last one, Giovan Battista, was elected cardinal by Clement XI and then Vatican Treasurer in 1707. He was finally papal legate in Ferrara from 1718 until his death.

Mariano Patrizi and Francesco Felice Patrizi, on the other hand, were amateurs of painting and architecture and honorary members of the Academy of San Luca. Both participated to the "Congregazione dei Virtuosi del Pantheon". and were very interested in the science of the Stars. As evidence of their eclectic interests, The Patrizi collection preserves an allegory of Painting and another one of Astronomy, initially attributed to Giuseppe Passeri but actually painted by Mariano and Francesco Felice themselves, and among the portraits of the Patrizi brothers by Giuseppe Passeri (Fig. 8), the one representing Francesco Felice and showing a scroll with astronomical symbols (Marshall, 2015a and 2015b).

The History of Astronomy Cycle

The present façade of the palace, previously property of the Garzoni and then of the Aldobrandini since 1605, was built in 1611. Mariano Patrizi bought it in 1642 from Olimpia Aldobrandini for 19000 scudi and then some restorations were carried out, among them the creation at the end of XVII century of "doi stanziolini al Piano de mezzanini di cima per servitio dell'Illmi SS.ri Abbate [Francesco Felice] e Mariano Patritij" (Michel, 1984).

The latter small rooms were decorated with a large pictorial cycle dedicated to the history of astronomy from the I century BC to the XVII century AD. It consists of a series of eighteen paintings, each one illustrating a different century with vignettes surrounded by landscapes.

This large work was certainly a creation of Mariano and Francesco Felice Patrizi, at least partially painted by Jacob e Christoph Worndle from Innsbruck, as demonstrated by Olivier Michel in 1984. The series was located in the attic of the Palace (fig. 2), in what is now a private apartment not accessible to the public, and it developed in three rooms, that we decided to call "room A", "room B" and "room C".

Fig. 2. The attic of Palazzo Patrizi-Montoro from above (Google Earth). The Room A, B and C are located in front of the church of San Luigi dei Francesi.

The cycle consisted of eighteen large-format paintings, each one framed by a couple of herms carrying various astronomical attributes (instruments, sundials, planets and moon phases), a celestial northern planisphere and four single herms. Eleven frescoes, the planisphere on the ceiling and two single herms are still located in the attic, while six canvases and a single herm have instead been moved for unknown reasons to the second floor of the building, probably between the XIX and the XX century. This relocation, of course, caused a loss of information and compromised the integrity of the cycle. Our previous work (Gandolfi, Leone and Masi, 2022) has allowed a reconstruction of its structure and of the disposition of the paintings, but unfortunately a canvas and a herm were lost for reasons unknown to date.

Luckily, thanks to an ancient black and white photographic plate in the Patrizi archive, dating back to the beginning of XX century, we have recently recuperated a reproduction of the missing canvas (heavily damaged) that deals with the history of astronomy in the VI century AD, completing the iconographic reconstruction.

Pictorial Style

The surviving paintings are either frescoes or "*sughi d'erba*"[1], and their genre is the baroque "*capriccio*".

This pictorial cycle is comparable with a contemporary set of "*faux tapestries*", commissioned by Pietro Ottoboni to Domenico Paradisi, Michelangelo Ricciolini and Francesco Borgognone, between 1691 and 1693, for the palace of the Papal Chancery. The theme of these works was Tasso's Gerusalemme Liberata. The cardinal ordered to produce 17 tapestries from these canvases; now they are not in the original location anymore, but scattered around the world: Metropolitan Museum of New York, London, San Francisco, Vatican, and the Chigi Palace in Ariccia (Standen, 1981).

It is possible to compare the History of Astronomy cycle to the series of "Astronomical Observations" by Donato Creti, commissioned in 1711 by the Bolognese count Luigi Marsili to convince the Pope of the importance of financing an astronomical observatory for the Holy Church (Takahashi, 2019). The eight small canvases, at present in the Vatican Museums, show the planetary system at the time: the Sun, the Moon, Mercury, Venus, Mars, Jupiter, Saturn and a Comet. The presence of the planet is dominant in the composition and surrounded by small human figures in XVIII

[1] The *sughi d'erba* are paintings based on organic colours realized on textiles, typical of the XVIII century and akin to tapestries (Bolzoni, 2009-2010). It is difficult to establish the reasons of the different technique used for different paintings, but we suppose that the frescoes were the original works in the attic (except for the celestial planisphere on the ceiling painted on textiles), and the *sughi d'erba* copies of some damaged or destroyed paintings, collocated at the second floor during an unknown phase of restoration of the atelier-observatory.

century clothes, reabsorbed into the vastness of the nocturnal scene. The celestial bodies were depicted as observed and measured with telescopes and other instruments (for which the artist had precise instructions and scientific references).

Architectures

Fig. 3. Palazzo Patrizi-Montoro. Cycle of the History of Astronomy. Roman details: the Capitol, Castel Sant'Angelo behind the columns, Sant'Andrea della Valle, the Tritone Fountain in the gardens of Palazzo Barberini, the Pantheon and the Horologium Augusti.

The *capricci* are usually characterized by the presence of archeological ruins in a landscape, but in this series we find reconstructed structures instead, due to the historical and philological approach of the cycle. We have identified a number of recognizable architectures mainly from Rome, perfectly illustrating the antiquarian fashion of the period: the Horologium Augusti and the Pantheon in the I century; the Statue of Marco Aurelio and the Capitol in the IV century; Sant'Angelo Castle and the Tritone Fountain in the V century; the Hercules temple (Foro Boario) in the XIII century; the Sant'Andrea della Valle dome in the XV century.

Fig. 4. Palazzo Patrizi-Montoro. Cycle of the History of Astronomy. The paintings of Room B (photo G. Masi).

It is also possible to recognize more or less famous monuments outside Rome, as the Torre Alessandrina at the mouth of the river Tiber (Fiumicino) in the III century; the Alexandria Lighthouse and the Babel Tower in the V century; the Rundetaarn of Copenhagen, the Paris Observatory and the Bolognese church of San Petronio in the XVII century.

Chronology and Identification of the Episodes

At the beginning of XVIII century, a monography on the history of astronomy did not exist still: dates and episodes were collated from many general treatises, for example from the encyclopaedia *De Quatuor Artibus Popolaribus* of Joannes Vossius (1650), the *Almagestum Novum* by Giovan Battista Riccioli (1651), the *Cronica de' Matematici* by Bernardino Baldi (1707) or the *Calendarium Ecclesiasticum Novum* by Lucas Gauricus (1552) (Spelda, 2015). We have examined many sources and tried to make sense of every scene, at least in a case establishing on the basis of the iconography the whole century and its collocation on the walls of the attic.

In general, the chronology of the astronomy development proposed by the vignettes of the cycle is indicated by captions, which are associated to numbers painted in red and scattered in the landscape. Unfortunately, these captions are in some cases deteriorated or illegible if not totally vanished, and the nature of the episodes must be either inferred by the year, or deduced by the century and by identifiable iconographic elements when the year is completely absent.

Fig. 5. Palazzo Patrizi-Montoro. Cycle of the History of Astronomy. The paintings of Room C (photo G. Masi).

Piecing together this complicated puzzle, we have tentatively identified 27/27 episodes in Room A, 22/26 in Room B and 31/32 in Room C, but there are still many uncertainties and doubts where captions and dates are lacking or appear plainly wrong. We have found in fact a number of unquestionable errors, due to lack of attention or ignorance of history or to philological errors propagated by ancient scholars.

In the end our iconographic interpretation is almost complete (80/85: 94%), counting also the uncertain episodes. Some cases are however desperate: the sources are heterogeneous and often conflicting, and the chronology very shaky, even for recent events. We plan to publish a complete catalogue of the scenes in a near future.

Iconographic Themes in the History of Astronomy Cycle

The eighty-five vignettes represented in the cycle may be classified thematically, bringing to light the main interests of the Patrizi brothers and of the Roman scientific community. The iconography focuses in fact mainly on Calendars and Easter cycles (19 episodes) and Observations, Models and Celestial Phenomena (29 episodes), but concerns also Instruments (clocks and gnomons: 7 episodes), Travels and Geographical Discoveries (10 episodes) and other mixed themes (17 episodes).

Moreover, notwithstanding the presence of many chronological errors, we noticed an increasing awareness of the historical evolution of Islamic Astronomy and a clear appreciation of its centrality in the development of the discipline. This may appear surprising in the cradle of Christianity, but in the end, it confirms the absence of religious and humanistic biases among the most qualified European scholars of the time, a thesis convincingly claimed in a thorough study by Daag Hasse (2018).

The Islamic episodes include Mohammad calendrical reform (VII century); the Omayyad rebirth of astronomy (VIII century); the apogee of Abbasids astronomy from al Mamun to the Banu Musa, Al Fargani, Al Battani, etc.; the experimental attitude demonstrated by Arabic scientists between the IX and X century and even the success of Seljuk Astronomy at Isfahan in Persia (XI century). In addition, the Patrizi brothers emphasize along the way the production of original ephemerids (XII century); the contribution to Alfonsine Reform (XIII century) and especially the key role in the translation and transmission of classical scientific texts (IX-XIII century).

Fig. 6. Francesco Bianchini (Wellcome Collection. Public Domain Mark).

Fig. 7. Palazzo Patrizi-Montoro. Cycle of the History of Astronomy. Details showing the influence of Francesco Bianchini: a) Herms in La Istoria Universale Playing Cards and in the paintings; b) Bianchinian Experimentalism in the cycle (Isfahan astronomers, Vincenzo Coronelli measuring his globe, Picard observing from the Paris Observatory); c) Saint Hyppolitus statue and the relative dissertation; d) the Age of the Martyrs in the paintings and in the project of the Museo Ecclesiastico; e) the Bolognese Meridian of San Petronio and its reprise in Santa Maria degli Angeli in Rome; f) cometary, stellar and lunar observations in the cycle.

The shadow of Francesco Bianchini

Francesco Bianchini (1662-1729), pupil of Giuseppe Ferroni e Geminiano Montanari, was one of the Italian leading astronomers between the XVII and XVIII century. He was educated in Bologna and Padua, then moved from Verona to Rome in 1684 and rapidly became a pole star for the papal court, dividing his time between physics, astronomy and antiquities (Mazzoleni, 1735).

Protegé and librarian of Cardinal Ottoboni, he briefly enjoyed success and visibility during the pontificate of Alexander VIII but entered in shadow during the reign of Innocent XII, only to became papal chamberlain and prominent scientist appreciated by Wilhelm Leibniz and Isaac Newton under Clement XI (starting from 1700, the date of beginning of the Patrizi Cycle).

His *La Istoria Universale* (1697) was an innovative and pioneering treatise on human history during the first centuries after the creation up to the Assirian Empire. The book investigate chronologically this semi-mythic age with the aid of antiquities and iconography, mixing earth and sky (Heilbron, 2008). As Hevelius introduced a naturalistic visual language for astronomy following the footsteps of Galilean drawings (Winkler and van Helden, 1992), so Bianchini invented an iconography for Cultural Astronomy, an accurate depiction of celestial antiquities related to the history of the world. In Bianchini's mind History and Astronomy systematically intersect on a visual level for the first time, opening new paths for investigation and communication.

Six Evidences of Bianchini's influence on the cycle

This new visual language that legitimized science in the domain of humanistic culture and in the religious heart of Christianity was certainly an inspiration for the Patrizi brothers.

The Veronese intellectual was in fact the prince of the Roman academies of the time: he participated to the Arcadia (the so-called Republic of the Letters) as "Selvaggio Afrodisio", he founded the "Accademia degli Indugiatori" and the "Accademia degli Umoristi" and helped Giovanni Ciampini to revive and maintain the "Accademia Fisico-matematica" established by Christina the Queen of Sweden.

At present, we have no proofs of a direct contact between these two artists/amateur astronomers and Bianchini, even if some sort of relationship appears extremely probable, but we can rely on a multitude of internal clues. We offer in particular six iconographic evidences from the cycle of the History of Astronomy, in itself a very "Bianchinian" project in the footsteps of *La Istoria Universale* (Fig. 7).

Evidence 1: Suit 4 in the Card Deck

The posthumous "*Carte da Giuoco*" (1871) extracted from the published and unpublished images of the *Istoria Universale* generated a parlour game with four suit symbols: *Frammenti* i.e. fragments, ruinous artifacts, *Acque* i.e. flowing water, *Stelle* i.e. constellations, *Autori* i.e. authors, representative historical figures (Dixon, 2005). They were associated to four ages: the first millennium, with few fragmentary remaining; the second millennium, the Age of Uncertainty, with the beginning of navigation and the Universal Deluge; the Mythic Age with the first mapping of the night sky and the Historic Age, dominated by rulers and personalities represented by herms. The last suit analogy with the decorative elements framing the paintings of the Patrizi cycle is evident: the herms have here the very similar role of introducing to a historical chronology.

Evidence 2: the Triumph of Experimentation

The many vignettes celebrating acts of measurement and observations with scientific instruments and precision mechanisms represent a clear connection to the interests of the Veronese astronomer and of his entourage. We have indeed evidences that Mariano participated as an eminent host to the Accademia Fisico-Matematica, where often Bianchini presided over the meetings (Crescimbeni, 1710). The Veronese scientist performed many experiments himself, being the first to introduce Newtonian Optick in Europe through public experiments (Donato, 2000). Patrizi's strong experimental interests, presented with emphasis in the Cycle, coincide with the contemporaneous approach of Bianchini.

Evidence 3: The Easter Canon of Saint Hippolytus

In 1703, Bianchini finally published his study of the Vatican statue of St Hippolytus, the martyr and creator of an important Easter computus engraved on the marble around the figure (Guarducci, 1974). The Patrizi brothers cited the sculpture of the saint ex-cathedra in the III century fresco, but it is clear from the painting that neither they nor the artist had ever seen the statue. Nonetheless, the source of the vignette is without doubt the *De Paschali Canone S.*

Hyppoliti Martyris (1700).

Evidence 4: Anomalous attention to Martyrs

Following the wishes of Clement XI, Bianchini examined in depth the theme of the christian martyrs of the first centuries, creating for them a specific age in the history of the world. The Age of the Martyrs during the empire of Diocletian features in fact prominently in the visual project of the Ecclesiastical Museum in the Vatican (Solch, 2010). It also appears rather incongruously in the Patrizi cycle in the III century painting.

Evidence 5: Homage to Cassini's Meridian Line

Besides the general interest in Gnomonic and sundials, Bianchini was an admirer of Cassini and the San Petronio meridian line realized by the astronomer from Perinaldo was an inspiration and a model for his Clementine Line in Santa Maria degli Angeli in Rome. The works started in 1701 with the participation of Maraldi, Cassini's nephew (Heilbron, 2005). The Cycle represents with realism the presentation of the Bolognese Line to Christina of Sweden in 1655 (Cassini, 2003).

Evidence 6: Astronomical Interests

Comets and variable stars were the main research fields of Montanari and topics particularly appreciated by Bianchini, which studied many transient phenomena and discovered stellar aberration before Bradley (Heilbron, 2005). These celestial objects stand out in many episodes of the cycle (Caesar's comet in I century BC, the star of the Magi in I century AD, the comet of 1577, Mira Ceti in the XVII century AD, the supernova of 1572), together with lunar and planetary astronomy (for example the detailed lunar phases of the moon on the shoulders of the herms in Sala C).

Conclusion

The pictorial cycle of the Patrizi brothers, a work of art that we plan to catalogue, study and promote in a more systematic way in the next years, illuminates a little known period of Italian science at the threshold of Enlightenment in the Papal State. Contrary to expectations in a city like Rome dominated by religious preconceptions, antiquarianism and anti-Copernican censorship, we found consistent traces of experimentalism, a notable openness to empirical astronomy and an acute awareness of the role of history in the scientific field, translated in the language of art. All characteristics are comparable to those displayed by European Capitals at the forefront of scientific and cultural change like Paris and London.

Fig. 8. Mariano and Francesco Felice Patrizi. Portraits by Giuseppe Passeri, end of XVII century (Patrizi Collection).

Finally, we would like to point out the extraordinary innovation of a visual language that mixes art and science, stars and history, scholars and instruments, exploiting the eternal fascination of astronomy. Factually recuperating the legacy of Galileo, in the very place where his sentence was decided.

Acknowledgements

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Zaychi vruh (Kabyle), Yambol district. Artificially hewn out of the rock trenches, oriented East–West and North–South, used for observations of the Sun in ***its extreme positions on the visible horizon*** (solstices and equinoxes) and ***culminations*** of bright luminaries. An additionally leveled rock, located in the northeast, allows determination of the summer solstice. This device could be used for measuring time intervals longer or shorter than a day.