



Arts

DOMENICO CRESTI (PASSIGNANO) AND THE FIRST ARTISTIC REPRESENTATION OF THE GALILEAN TELESCOPIC MOON

Josie Agatha Parrilha da Silva ^{*1}, Marcos Cesar Danhoni Neves ²

^{*1} Department of Visual Arts, State University of Ponta Grossa, Brazil

² Physics Department, State University of Maringá, Brazil

Abstract

This research reports the imagery representation of the Moon in the Virgin of the Immaculate Conception with Saints and Angels (1611) by Domenico Cresti (Passignano). Our goal is to defend this image as a telescopic representation of the Galilean Moon, that is, a cratered Moon as presented by Galileo Galilei in his work *Sidereus nuncius* (1610). Passignano was a friend of the artist Lodovico Cardi (Cigoli) who corresponded with Galileo and exchanged information on telescopic observations. This relationship between the artists and Galileo reinforces the possibility that the two painters had represented cratered moons. The research consists of bibliographical and imaginary research and, at the end, the Moon of Passignano as the first representation of a Galilean Moon inside a Church.

Keywords: Galilean Moon; Domenico Cresti; Art and Science; Lodovico Cardi; Galileo Galilei.

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1. Introduction

Domenico Cresti (Fig. 1) was born in Passignano, near Florence, in 1559. As was customary in his time, he was called by the name of his region of origin. His initial education was with the Valombrosian monks and he began his artistic activities in Tuscany with Giovanni Batista Naldini (1535-1591) and Girolamo Macchietti (1535 / 41-1592). (Rodinò, 1984)

This section should put the focus of the manuscript into a broader context. As you compose the Introduction, think of readers who are not experts in this field. Include a brief review of the key literature. If there are relevant controversies or disagreements in the field, they should be mentioned so that a non-expert reader can delve into these issues further. It should conclude with a brief statement of the overall aim of the research or experiments and a comment about whether that aim was achieved.



Figure 1: Carlos Lasinio, Portrait of Domenico Cresti (Passignano). 1790-1794
Source: Wikipedia,1790-94

We present one work by each of these artists that contributed to the formation of Passignano: *Bath of Barsheba* (Fig. 2) by Naldini and the *Assumption of the Virgin* (Fig. 3) by Macchietti. In the first work, which has as its theme a character not presented in the Bible (but described in other documents and presented in the oral tradition), Batseba, we observe the most classic style of the Renaissance. The second, an interpretation of the biblical theme of the ascension of the Virgin Mary to the heavens, the Assumption, presents a different style, and can be interpreted as a Mannerist style.



Figure 2: Giovanni Batista Naldini, Bath of Batseba, Century XVI, Hermitage Museum. St Petersburg

Source: Naldini, century XVI



Figure 3: Girolamo Macchietti, Assumption of the Virgin, 1577-78

Source: Machietti, 1577-78

Between 1575 and 1579 Passignano worked in Florence and, from 1581 to 1589, in Venice, like assistant of Federico Zuccari (1542 / 43-1609). Besides Zuccari, we observed a great influence of Tintoretto (1518-1594) in the artistic formation of Passignano. (RODINÒ 1984). We highlight one of the details of the work *Paradise* (Fig. 4) to present the style of Tintoretto: dark colors, special lighting in certain characters and large number of characters disputing the same space. From Zuccari we selected *Assumption of Christ* (Fig. 5), a work with a common scene represented in the Catholic Church. It has in common with Tintoretto the style of many characters in the same space, however, the artist uses colors lighter and softer in all the characters, highlighting the blue, yellow and ocher in light shades.



Figure 4: Tintoretto or Jacopo Comin, Paradise, Detail. 1582-1597, Ducale Palace, Venice

Source: Tintoretto, 1582-97



Figure 5: Federico Zuccari, Ascension of Christ to heaven, Fresco, 16th century
Source: Zuccari, 16th century

Passignano, in spite of its Florentine origin, followed the style of the Venetian school, therefore, accepted and it followed its traditions. He was known for his quick painting and the use of little paint. This quick painting reminded him a lot of Tintoretto and because of this he also earned the nickname of *Passa Ognuno* (Pass All), probably a play on words with his hometown. Due to low ink usage, many of his works have been damaged over the years. (Rodinò, 1984)

In Florence, the artist was responsible for the street decorations on the occasion of the marriage of Grand Duke Fernando I with Christina of Lorraine. He carried out numerous works, among them, the frescoes of the *Translation and Funeral of Saint Anthony* (1589) (Fig. 6); in the Salviati Chapel in San Marco; *Preaching of John the Baptist* (1590) to San Michele Vistomini; *Assumption of Mary* (1592) in the Church of San Bartolomeo in Monte Oliveto (Fig. 7) and also works in the Uffizi Gallery. (Rodinò, 1984)



Figure 6: Domenico Cresti (Passignano). Funeral of Saint Anthony, 1589. Salviati Chapel. Convent San Marco, Florence. Source: Passignano, 1589



Fig. 7. Domenico Cresti (Passignano). Assumption of Mary, 1592. Church of San Bartolomeo, Monte Oliveto (Florence)

Source: Passignano, 1592

In Rome Passignano developed works in the Papal Basilica of Santa Maria Maggiore between 1605-1610 and the decoration of the Barberini Chapel in San Andrea della Valle. (Rodinò 1984). The work is to be analyzed in the Baptistery of Santa Maria Maggiore, the *Immaculate Conception Virgin with Saints and Angels* (Fig. 8), a fresco of the Baptistery (Fig. 9).



Figure 8: Domenico Cresti (Passignano), The Virgin Immaculate Conception with Saints and Angels, 1611. Paolina Chapel of the Papal Basilica of Santa Maria Maggiore, Pomegranate
Source: Silva; Danhoni Neves, 2015



Figure 9: Domenico Cresti (Passignano), Fresco of the Baptistery, 1611. Basilica Papale Santa Maria Maggiore. Pomegranate

Source: Silva; Danhoni Neves, 2015

Passignano maintained good relations with the Church, especially with Pope Clement VIII that nominated and gave him many commissions and, also, the same thing with the next Pope, Urban VIII. (RODINÒ 1984). We also highlight his works: *Apparition of the Archangel Michael on Mount Gargano* (1602) in San Michele (Fig. 10); *Assunta* (1610-1614), *Duomo* (Livorno) (Fig. 11); *Mary Magdalene* (1616); *Apparition of the Risen Christ to Mary Magdalene* (1616) (Fig. 12); *Ecce homo*, Diocesan Museum of San Miniato (Fig. 13); *Resurrection* (1600-25); *Apparition of the Risen Christ and Allegory of Fidelity* in Vila Medicea, Artimino, as well as artistic works in San Drediano, Pisa. (Rodinò, 1984)

Passignano also performed allegories and portraits. Among these portrait paintings we highlight *Galileo Galilei*. Passignano died in Florence in 1638



Figure 10: Domenico Cresti (Passignano), Apparition of the Archangel Michael on Mount Gargano, 1602. San Michele

Source: Passignano, 1602



Figure 11: Domenico Cresti (Passignano), Assunta, 1610-1614. Duomo (Livorno)
Source: Passignano, 1610-1614



Figure 12: Domenico Cresti (Passignano), Apparition of the Risen Christ to Mary Magdalene.
1616
Source: Passignano, 1616



Figure 13: Domenico Cresti (Passignano), Ecce homo, XVII century, Diocesan Museum of San
Miniato
Source: Passignano, 17th century

2. Methodology: The Fraternity of Artists-Astronomers: Domenico Cresti, Passignano; Lodovico Cardi, Cigoli; And Galileo Galilei

The story involving these three historical figures: Passignano, Cigoli and Galileo, both in the field of Art and in the field of Science was extraordinary. Galileo and Cigoli studied for a time at the *Accademia del Disegno* founded by Michelangelo and Vasari. In the *Accademia* the Italian scientist learned the techniques of perspective that would be defining for the interpretation of the telescopic images and identification of the lunar craters and other discoveries synthesized in the famous *Sidereus nuncius* (1610).

We also know that Galileo and Passignano met in the Monastery of Santa Maria de Vallambrosa, probably as students, and this friendship lasted a lifetime. Passignano are the most famous portraits of Galileo immortalized in his paintings.

Probably Galileo's friendship with Passignano had led them both to the rich Venetian Republic when Galileo tried to sell to the Doge of the Republic the geometric compass (a kind of ruler and compass that allowed the calculation of range and angulations of shots) and Passignano passed to paint in a style closer to Tintoretto's technique. Galileo became aware of a scope telescope (later known as the refractor telescope), brought from Holland and invented by Hans Lippershey. Galileo soon acquires this glass (they say it was sold as a toy for children) in the popular market of the Venetian Republic, extended the optical resolution power of this toy and tried to sell it as a weapon of war for the Venetian Navy, attributing the power of to anticipate the arrival (many miles away) of an enemy ship.

The extraordinary connection of these three men in the rich sense of the Art-Science relationship will occur when Galileo in Florence, Passignano and Cigoli in Rome will exchange a series of correspondences on the solar observations, in a work that Galileo will immortalize in his other work *Trattato sulle macchie Solari e loro accidenti* [Treaty on sunspots and their accidents].

Passignano and Cigoli had worked since 1609 in the frescoes of the Papal Basilica of Santa Maria Maggiore in Rome paid by Pope Paolo V. Passignano on the ceiling of the Baptistery and Cigoli in the great dome that would house the remains of the Pope in the Chapel Borguese or Paolina.

In the great dome, Cigoli paints a *Madonna* that ascends to the Heavens, as in the image of the *Apocalypse*, supported on a Moon, as was the tradition in the Christian iconography. However, heresy of the heresies, Cigoli represents a cratered Moon, covered by lunar abysses as in the telescopic discoveries of Galileo. The image is very similar to that of Passignano, which shows that both artists made lunar telescopic observations. The craters were erased later by others, covered with paint and rediscovered only in 1930 when a restoration work was made. (Silva, Danhoni Neves, 2015)

In turn, we find that Passignano also performed a painting of a cratered moon. But, more subtly, he chose the *Immaculate Conception* supported by a horn-shaped Moon (a traditional representation of four natural satellite). However, this moon is not immaculate, with a zoom 80-200 mm and a professional camera we can see spots that is very irregular when it is compared with the characteristic iconography. The painting resembles very much some of the representations of

the Moon present in the *Sidereus nuncius*. We consider this the second telescopic moon painted inside a Church. We present this discussion for the first time in the VI National Symposium on Science, Technology and Society in 2015, in Brazil, which motivated us to later make a new trip to Italy to study, specifically, the fresco of Domenico Cresti on the ceiling of the Baptistery of Santa Maria Maggiore

All this work demonstrates the very close relationship between Galileo and the two great artists of the Renaissance between the final years of the Cinquecento and the first half of the Seicento. There was not at that time the hateful division of knowledge that the post-Cartesian world would soon open and which lasted until our contemporaneity.

We carry out the unpublished translation of 31 letters corresponding to the *carteggio* (exchange of letters) Cigoli and Galileo (Neves *et al*, 2015). Following, we mention the set of passages in which Galileo and Cigoli mention the artist Passignano.

We find in the letter dated October 24, 1610 a mention of the artist Passignano who sends greetings of “kisses-hands” to Galileo. It is the first record in the work of the newly initiated work of the Paolina dome of Santa Maria Maggiore: *La Vergine Immacolata and gli Apostoli*, which is named by us as the *Madonna of Cigoli*. (Neves et al, 2015)

On November 13, 1610, Cigoli writes of a curious fact: Passignano, Michelangelo Buonarroti (the nephew of the Great Michelangelo) and Ciampoli had seen the stars (probably the satellites of Jupiter described in the *Sidereus*). The artist points out that Buonarroti considers everyone to see and believe in the new astronomical discoveries, that is, it is necessary to 'see to believe it!' (Neves et al, 2015)

On September 16, 1611, there is an important account of the relationship between the artist and the scientist reported in a letter, mentioning that his friend and also painter, Passignano, is observing the heavens with a telescope. Cigoli recounts the difficulties he has in maintaining focus (probably by the rudiment of tripod and the lack of a search lens). Discusses the existence of eight spots on the solar disk. An important opinion: he mentions the stains as solidary structures to the solar disk and suggests to Passignano that they observe them for several days. This fact is of great importance for the future quarrels with Galileo, especially with the Jesuits, and also with Kepler, who considered the sun spots as external structures, not belonging to the Sun. The sequenced observations will be very important because they show the morphological change of the spots of the limb to the center of the sun, a fundamental characteristic of a spherical anamorphosis, and unquestionable fact of the spots belonging to the solar structure (photosphere). (Neves et al, 2015)

On September 23, 1611, Cigoli recounts again the observations of Passignano on the morphology of the spots and that he wanted to buy a good telescope. He quotes to Galileo about the envy of others and recommends that Galileo take care of a certain Gualterotti, who claims to have been inventing the telescope. He speaks of Lodovico delle Colombe about his non-acceptance of the rugosities on the surface of the Moon. In this letter, it is evident the non-acceptance of the Galilean astronomical discoveries almost two years after the notification of Galileo to the world. (Neves et al, 2015)

On October 1, 1611, according to one of the only two letters that came from Galileo to Cigoli, the Italian physicist quotes Delle Colombe and asks that the artist Passignano make the observations of the Sun correctly, probably using the method of the projection on *carte blanche* with the disk of the sun previously designed (in order to facilitate the location of the spots and their distinct morphologies along the solar disc; this method is teh correct, also, because protec the eyes form the direct observation). (Neves et al, 2015)

After Christmas and New Year festivities, in a letter dated on February 3, 1612, Cigoli cites the publications of the new telescopic discoveries, the work of Passignano on sunspots and the evolution of these observations. It also expresses the desire to acquire a good telescope and that it would request help, surprisingly, from the Jesuits. Reports the drying time of the painting on dome. If it were not for that reason, work would be over, he said. (Neves et al, 2015)

The letter dated on July 14, 1612 is important for the theme *Science and Art* because it discusses Michelangelo, paralleling his work (art) and the new astronomical science. Cosimo sees more spots and he, Cigoli, can no longer make observations. He says he observed the sun by projection and adds an illustration of the method. He writes that Passignano made more observations and that the other painter, Coccapani, does not have such a good telescope. Question about the script about sunspots. (Neves et al, 2015)

All this correspondence is very rich in the sense of showing that the work of building knowledge was essentially inter and transdisciplinary, not by choice, but by its essential nature. The time of Galileo was able to mix multiple facts to consolidate a new conception of World and Nature: the broad formation in science and art, the creation of Accademies (*Accademia del Disegno and Accademia dei Lincei*), the development of astronomical instruments, the maturity of linear and anamorphic perspective.

Horst Bredekamp (2015) worte about this remarkable feature and involves not only Galileo but his entourage, through a Cigoli speech:

Ludovico Cigoli, the painter friend of Galileo since his days together at the Academy of Arts in Florence, summed up the question as follows: "A mathematician, no matter how great he is without the ability to draw, is not only mathematical half as well as man without eyes. " For Cigoli, the proper apprehension of reality does not depend solely on its reception, but also on its reproduction - and in no way only on its perception, but also on its construction. To see and to draw are, for Cigoli, the foundation of knowledge, and this is how he wishes Galileo, at the end of his letter, to have a clear vision: "It's enough that you have have eyes that do not impede the course of your studies" (Bredekamp, 2015, p.147).

Bredekamp, based in Cigoli, reinforces that 'seeing and drawing' is the ground-zero to the construction of knowledge. The ability to observe and represent must be fundamental to the artist and the scientist.

3. Findings: Imaginary Analysis of the Virgin of the Immaculate Conception with Saints and Angels

To carry out this analysis, we chose to adopt some of the assumptions of Panofsky's analysis (2007). This option is given, in particular, by sharing with this author on the common point between the scientist and the humanist: for both a research begins with *observation*. We point out this question because the author we will analyze, Passignano, had the observation as the central point in his formation. In the course of the elaboration of the work that we are going to analyze, the artist also made astronomical observations under the strong influence of his friend Galileo.

For Panofsky (2007), both the scientist and the humanist start a research based on the observation that has as a previous support *a theory*. We understand that at this time, in the Renaissance, there was no such separation between scientist and humanist, and thus, Passignano can be considered an artist, or an *humanist-scientist*.

Panofsky's proposal refers to the terms *iconography* and *iconology*. While *iconography* deals with the *theme* or *subject*, *iconology* is the study of the *meaning* of the object. The author defines *iconography* as "the branch of the history of art that deals with the theme or message of artworks as opposed to its form". (Panofsky, 2007: 47). Then he goes on to *iconology*: "an iconography that becomes interpretive and thus becomes an integral part of the study of art, rather than limited to the role of preliminary statistical examination" (Panofsky, 2007, p. 54). In both definitions, we need to distinguish *theme* and *form*.

The form of an artwork is its visible aspect, which presents color, line, dimension, among other expressual qualities. The theme can be described in three levels: primary, secondary and the intrinsic meaning or content, which provide subsidies for the analysis of an artwork. Panofsky (2007: 64) elaborated an explanatory table (Table 1), which we summarize as follows:

Table 1: Synthesis of the topic analysis from Panofsky (2007)

Purpose of The Interpretation	I - Primary or natural theme - (a) factual, (B) expressional - constituting the world of artistic motifs	II - Secondary or conventional theme, constituting the world of images, stories and allegories.	III - Intrinsic meaning or content, constituting the world of symbolic values.
Act of Interpretation	Pre-iconographic description (and pseudo-formal analysis)	Iconographic Analysis	Iconological Interpretation

Source: Prepared by the authors (2017)

From the proposal of Panofsky (2007) we will analyze the work of Passignano, giving greater importance to the *theme* in relation to *form*. However, we emphasize that in the period in which the work was elaborated, the Renaissance, *theme* and *form* were in great harmony, making it difficult to separate them. We will re-present the *Immaculate Conception Virgin with Saints and Angels* by cutting some of their elements that will be commented on in the analysis from the three steps suggested by Panofsky: pre-iconographic analysis, iconographic analysis and, finally, iconological interpretation. (Fig. 14)

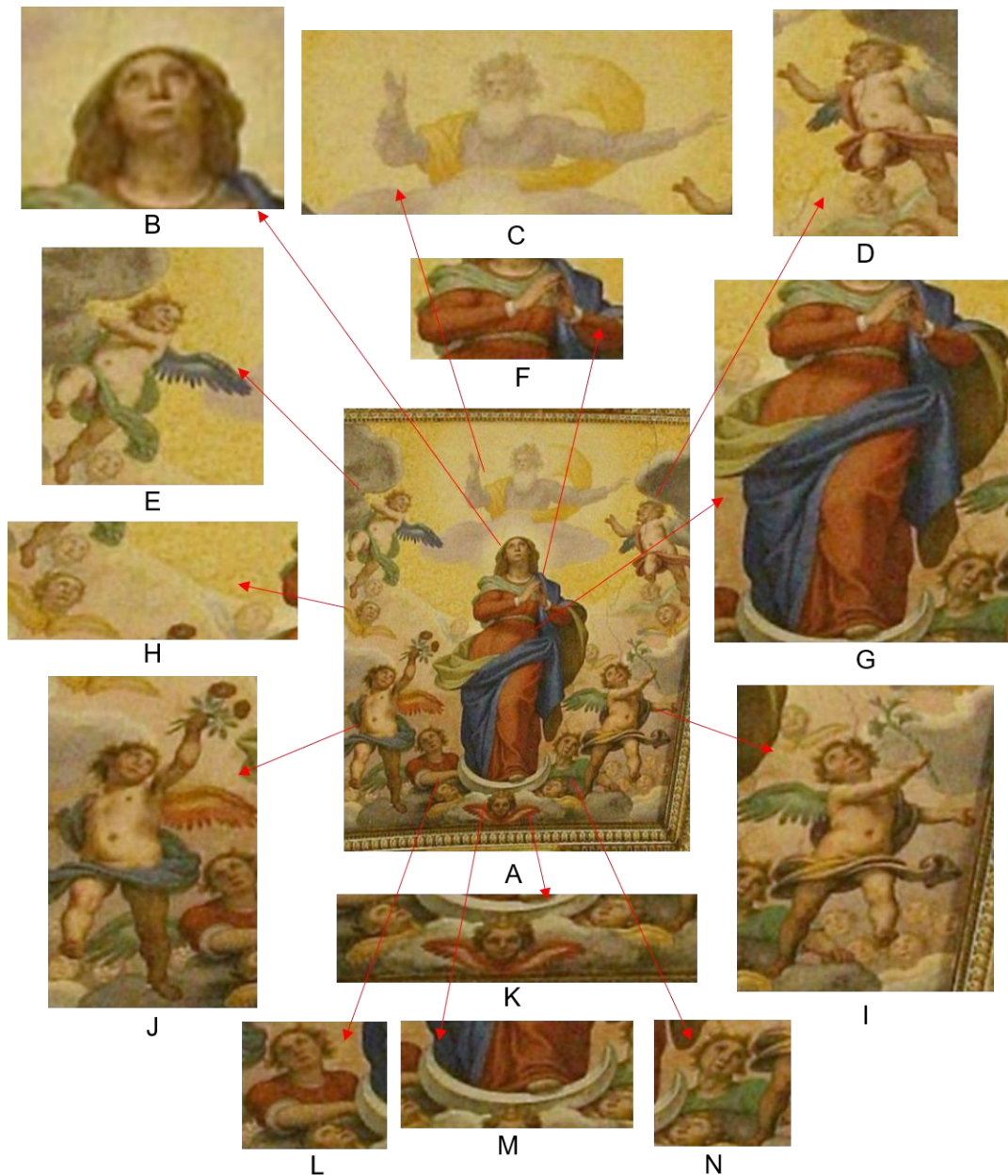


Figure 14: Virgin Immaculate Conception with Saints and Angels - A and cuts B, C, D, E, F, G, H, I, J, K, L, M, N.

Source: Elaborated by the authors (2018)

Pre-iconographic Analysis of the Virgin Immaculate Conception with Saints and Angels

The main character represented is a woman. The woman is standing, looking up at the sky and her feet are resting on a horn-shaped moon (Fig. 14A). Just above the woman's head, in the background and farther away, we see a male figure (Fig. 14C). Heads like that of angels appear in several parts of the image, because they have wings, some in higher resolution and others more diffuse (Fig. 14H). The wings of these possible angels have different colors: ochre, yellow, green, blue, white. Throughout the image it is possible to observe clouds, which determines that the representation is in the heavens. The composition present the colors: ochre, blue, yellow, green and white tones.

The female character has her gaze upward and looks very concentrated (Fig. 14B); one has the impression of looking at the male figure that is just above (14A). The hands are joined, touching the fingers as in a prayer form (Fig. 14F). It has one of the legs, the left, further ahead and it can be observed that its left foot rests on the Moon; as it is not possible to observe the fingers, one has the impression that the woman is wearing a shoe (Fig. 14G).

The clothing of the female figure is in the red tone, long length, as well as the sleeves and with different shades. It has a belt and a cloak that covers your head, back and passes through the front of the body. The mantle has two different colors, one on each side. The garments cover the whole body and can be observed leftovers of fabric, a straight and broad modeling (Fig. 14G).

The Moon, represented in the shape of a horn, corresponds to the decreasing Moon. It presents light and shade play and, despite being in a common format, presents three-dimensionality and imperfections, which are not caused by clouds (Fig. 14M). The moon is firm, as is the figure of the woman. This firmness does not represent inflexibility; the planning of the clothes and the positioning of the body demonstrate the existence of movement, as if the woman had just put her left foot on the moon, about to make one more movement.

In the same plane of the figure of the woman and of the Moon, there are two infant figures with wings, as of angels: they are naked, but with tissues covering the genital region; in hands, flowers and plants (Fig. 14J and 14 I). A little further down, near the woman's feet, we see two adult figures resembling male figures, these are in clothes. In the same plane we see faces with wings in which the body is not visible (Fig. 14L, 14 N).

In the upper part of the image we have figures of children with wings, without clothes and with bands covering the genital part: figures that represent angels of whole body (Fig. 14D, 14E) and still figures of heads with wings without bodies (Fig. 14H). On a more distant plane and at the top, the figure of a man, the lower part of the body mixed with a cloud, clothing and cloud, are in blue color with different shades. A yellow stripe is part of his clothing. He has beard and white hair. We can observe several images of faces that make up almost the entire background of the image. (Fig. 14C). On the basis of the title of the work, we can say that the feminine image is that of the Virgin Mary who rises to the heavens towards God the Father (the male figure above).

Iconographic analysis of the Virgin Immaculate Conception with Saints and Angels

The *Virgin Immaculate Conception* was performed with the *fresco* technique in the dome of the Baptistery of the Papal Basilica of Santa Maria Maggiore. The female figure of Passignano represents Mary, the mother of Jesus (son of God), called the *Virgin Mary* by the Catholic Church. The denomination *Conception* refers, according to the Catholic theology, to a grace received at the moment of its conception, of not owning the original sin like all the other human beings. Finally, it is one of the dogmas of the Catholic Church, or rather, a Marian dogma: Immaculate Conception. According to Murad (2012), these dogmas have no direct biblical basis, that is, they are not written in the Bible but were elaborated from the Church's own tradition. The dogma of the Immaculate Conception thus refers to Mary not having original sin, since all other conceptions are given through a sexual act (original sin, according to the Church, would have derived from Adam and would be handed down from generation to generation by sexual intercourse).

The Catholic Church uses symbologies very often in gestures, objects, colors. Starting from this catholic symbolism, we highlight in the image under analysis: flowers and colors. The branch of flowers that is in the hands of the angel on the right resembles a bunch of roses. The roses were presented in a stylized form and were a Christian symbol used since the year 1200 and represent the Messiah's promise; the branch that is in the hands of the angel on the left, resembles the representation of lilies, since they appear in a stylized way. It is a symbol of purity and symbol of the Virgin Mary, but it also refers to the resurrection of Christ and the possibility of resurrection of any person.

In the colors of the *Immaculate Conception* we see the red, blue and green. The red, which appears in tones more lights in the tunic, represents the blood and, therefore, is used in celebrations of martyrs, apostles and evangelists. The blue of the band is not recognized as one of the liturgical colors, but its use is frequently used in the catholic tradition in images of the Virgin Mary and in its celebrations. Often the Virgin's mantle is blue. The green symbolizes hope, renewal and rebirth. Those who go to Paradise, after death, wear green robes, as in the specific case of the scene analyzed.

As previously discussed, we observe in the image the presence of faces with wings around the *Immaculate Conception*, above, beside, below. These are angels, common characters in biblical scenes. According to the Catholic Church, angels "are purely spiritual creatures, endowed with intelligence and will: they are personal and immortal creatures. They surpass in perfection all visible creatures [...] ". (Vaticano, 2000, p.97)

The image is represented by its colors and symbolism, the Virgin Mary arriving in heaven in an important representation for the Catholic Church, as described in the Catechism of the Church: Finally, the Immaculate Virgin, preserved immune from every stain of original guilt, finished the course of earthly life, was assembling in body and soul the celestial glory. And that she might more fully conform to her Son, Lord of lords, and conqueror of sin and death, she was exalted by the Lord as Queen of the universe. (Vaticano, 2000, p.273)

The description of the Catechism refers to the oral tradition of the Catholic Church and does not appear described in the Bible, it represents the scene of the Assumption of the Virgin Mary, that is, its ascent to heaven.

Iconological interpretation of the Virgin Immaculate Conception with Saints and Angels

The iconological interpretation refers to "cultural symptoms, or symbols" and how these were expressed by the author of the work. It is possible to make different interpretations, since it depends on the historical-social knowledge of the time and space of the work. However, such analysis depends on the interpretations of the performer.

The period in which the work was performed, Renaissance (understood as historical period), was conflicting in relation to artistic styles and themes. Among the styles of this period, art historians report to the Renaissance Classic, Baroque and Mannerism. (Silva, Danhoni Neves, 2015)

Italy, cradle of the Renaissance, had different styles, especially linked to its different geographical regions. Passignano, although born and initiated his artistic studies in Florence, worked and had

influence of Venetian artists. It is possible to observe in his work different themes: allegories (Fig. 15), portraits (Fig. 16), biblical themes (Fig. 17) and styles (Classic, Mannerism and still a certain proximity to the Baroque). This conflict, however, is related to a specific conflict, that is, the spiritual that the men of their time shared.

Passignano worked in the same church as his friend Ludovico Cardi, Cigoli. The two artists were friends of Galileo and shared knowledge. In particular, the telescopic observations, among them, those of the Moon.



Figure 15: Domenico Cresti (Passignano), Allegory of Fidelity, Villa Medicea, Artmino.
Source: Silva; Danhoni Neves, 2015

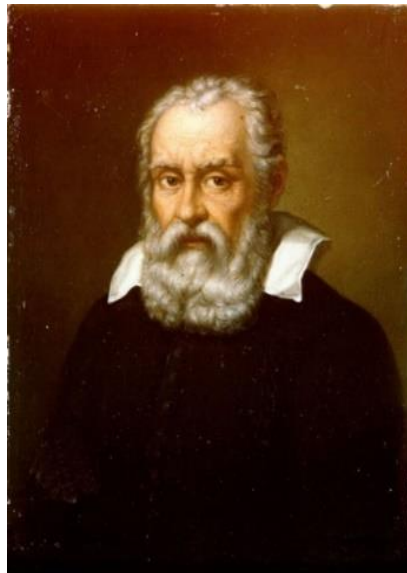


Figure 16: Domenico Cresti (Passignano), Portrait of Galileo Galilei (one of the versions), 1642
Source: Passignano, 1642

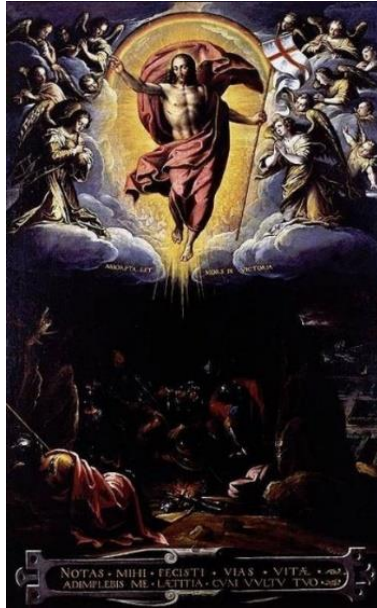


Figure 17: Domenico Cresti (Passignano), Resurrection, 1600-25, Vatican Museum, Rome
Source: Passignano, 1600-25

Cigoli is, admittedly, the artist who first represented a cratered Moon, as described and represented by Galileo in the same period in which the two artists were working on their works. We believe that the Moon of Passignano is also cratered and its representation is close to the representation made by Galileo Galilei.

One of the characteristics of the Renaissance is the use of allegories and Passignano was one of the artists who worked with this form of representation, as, for example, in the *Allegory of Fidelity*. Walter Benjamin (2011) identifies allegory as an aesthetic category. For the author, the allegory is more complex than the symbology, since it presents other possibilities of signification - because it is necessary to make its interpretation, usually ambiguous, being able to index a hidden meaning very difficult to be deciphered.

We observe in some of the works of Passignano the Baroque style, by the use of the illumination, colors and traces, etc., as we can examine in his work *Resurrection*. (Fig. 17)

Although the work analyzed does not have the characteristics of the Baroque, it is possible to observe the baroque influence in his work, besides what it is in a dome, which is one of the characteristics of this style. The representation of the *Assumption of the Virgin* presents a desecrated, cratered Moon, as well as the one he had observed by using an astronomical telescope. This cratered, desecrated Moon defines all the work presented. The *Immaculate Conception* did not have macula, original sin, but now, when putting itself on this Moon demonstrates desecrated. It is important to highlight the place where this representation is found: the baptistery.

Baptism for the Catholic Church represents the moment of purification of original sin. The only person who did not have this sin was the Virgin Mary (*Immaculate Conception*). Therefore, she was chosen as the theme of this space of purification. However, she is no longer immaculate.

The cratered Moon of Passignano can, therefore, in this space, represent a whole discussion that was realized in that period. The years ranging from the telescopic discoveries of Galileo, 1609, to his death in 1642, are profoundly marked by the vision of the cosmic vastness, the imperfections of planetary reliefs similar to ours, by the possibility of the infinitization of the universe as Giordano Bruno thought in his Copernicanism radical that had cost him his life. Science and Art were deeply related before a new world and before a new Revolution that would forever change the course of knowledge.

4. Discussions: Imaging Comparison Between The Moons of Cigoli, Passignano and Galileo Galilei

Initially we will make the analysis from the comparison between the *Immaculate Conception* of Passignano and the *Madonna* of Cigoli. We chose to cut out the representations of the Virgin and leave them with the same proportion. It is important to note that both are painted in oval ceilings, anamorphizing the images. (Fig. 18)



Figure 18: Cut of the Virgin of Passignano (Figure 8) and of the Madonna of Cigoli, 1610-1613
Dome of the Borguense Chapel (Paolina) Papal Basilica of Santa Maria Maggiore, (Silva,
Danhoni Neves, 2015)

Source: Authors' personal files

We can see similarities between the two female characters *Immaculate Conception* of Passignano and the *Madonna* of Cigoli, in particular, the features of the design, positioning of the body and face (facing upwards) and the expressiveness they present. The two figures stand with their legs straight on the moon and their knees slightly bent.

The two female characters have similar colors in their robes: red dresses, mantle covering head back and wrapping the body with one side in blue tint. The background, where the two virgins meet, has similar colors: yellow (golden), blue, white and ocher. Passignano still uses the green color.

Passignano's artistic style is presented by Argan (2003) as Mannerist and when compared to Cigoli's work both have similar characteristics as: contorted bodies, expressive faces, less sharp contours, canvas with clarity, light and shadow creating unreal shadows. The two virgins are in the same church and were held concomitantly.

To compare the three moons, we place them side by side. (Fig. 19). The moons of Cigoli and Passignano were cut out to focus on expanding the focus and presented the six moons of Galileo realized in watercolor by means of telescopic observation. Then, we select one of these (the first of the second column), then we put the 3 moons in the same position and dimension (Fig. 20). Finally, we left the three moons in black and white. (Fig. 21)

We note that the two works (*Immaculate Conception* of Passignano and *Madonna* of Cigoli) were held in the same period and in the same Church and the two artists were friends and shared the same circle of friendship, including Galileo (as we have been able to follow in some of the letters exchanged between Cigoli and Galileo). There was probably a lot of interaction between his techniques, ideas and concepts.



Figure 19: Cigoli's moon (A) - cut from Figure 18; Moon of Passignano (B). - cut-out from Fig. 8; Galilean moons (C) - Galileo Galilei's squares for the book *Sidereus nuncius* (Source: Silva; Danhoni Neves, 2015)

Source: Personal archives of the authors

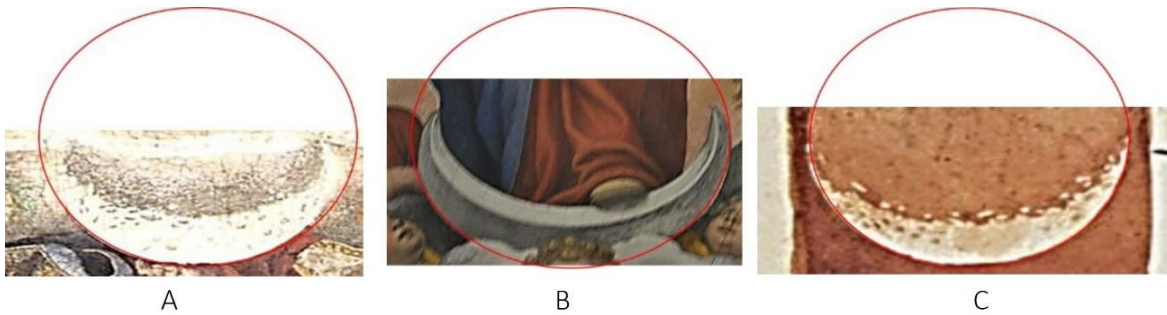


Figure 20: Moons of Cigoli (A), Passignano (B) and Galileo (C) from Fig. 18 and Fig. 21.
Source: Prepared by the authors, 2017

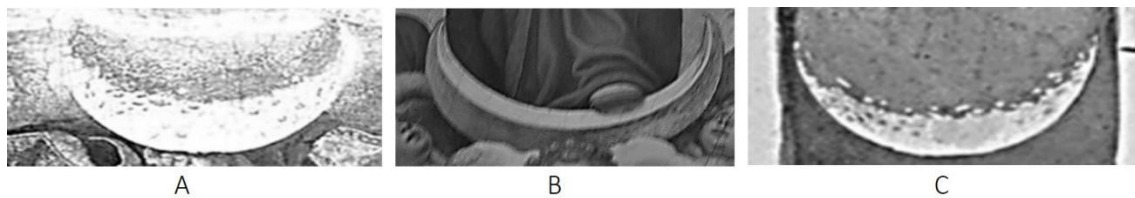


Figure 21: Moons of Passignano (A), Cigoli (B) and Galileo (C)
Source: Prepared by the authors, 2017

5. Conclusions

From all of the above, we would like to emphasize the novelty of the present work in the interpretation of the image of the Moon present in the fresco of Passignano, focusing on the support of the Immaculate Conception on a telescoping moon equally cratered as represented by the moon of the fresco of Cigoli in the dome which would shelter the remains of Pope Paul V.

In general, the imperfections notably present on the moon in the form of a horn of Passignano may appear inaccuracies of the painting or some shadow effect. However, we discard this hypothesis, both by the written record (*carteggio*), and by the historical social context of the period: The Renaissance itself and the Scientific Revolution that was going on since 1543 with the publication of the book of Copernicus, *De revolutionibus orbium coelestium* (The revolutions of the celestial orbs). The fact that Passignano used a telescope to make solar observations for Galileo, as Cigoli also did, is further proof that the Florentine artist represented in the fresco what his new, powerful eyes, the telescope, saw: an imperfect and cratered moon.

To conclude, and to rescue the discussion and analyzes carried out, the photographs we carry out in the baptistery of the Papal Basilica of Santa Maria Maggiore (Rome) clearly show in the line of the terminator of the crescent Moon irregularities that should not be credited to the irregularities of the painting or to the deleterious effect of time. Passignano had a small telescope (probably acquired from some Jesuit) that aided him as much as Cigoli to realize solar observations for Galileo. Passignano was therefore an attentive observer and the imperfections present in the fresco are due to the very selenography he had recorded with the lenses of his small refracting telescope. Passignano, like his friend Cigoli, realizes a marriage between heaven and earth, not neglecting that terrestrial imperfections (in reference to their geographical accidents) also affected the

apparent celestial perfection of the Moon, as the Peripatetic (Aristotelian-Thomist) philosophers still believed.

Passignano is very realistic in his works, which reinforces the idea of irregularities in the crescent moon in the form of scythe are actually the imaginary, telescopic representation of the lunar surface. It plays also in favor of this interpretation because the games of shade-and-light are dramatic in the surface of the Moon, deserving of Galileo not only its arguments for the matter of the relief inherent in the surface of the selenite body, like, and mainly, for the calculation of the dimensions of the "lunar mountains".

This discovery of another Moon cratered within an environment where Aristotelian-Thomist dogmatism prevails widens the debate about the consolidation of the Scientific Revolution initiated since Copernicus, amplifying the need that Galileo himself had to try to convince the clergy of the idea of a new universe (beyond and with another order). This is very important for new research involving the imagery and the search for documents that may further clarify this nebulous period of transition.

Finally, when we consider the Moon of Passignano as "the second crater moon," we are reporting on the late discovery we have made. However, it must be considered the **first cratered moon** within a clerical environment, for it was completed in 1611, about two years before Cigoli's masterpiece in the great dome of Santa Maria Maggiore. This is the most fundamental conclusion of this work and its most significant contribution to new studies on the subject: Passignano is the author of the first Galilean and telescopic Moon.

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*Corresponding author.

E-mail address: josieaps@ hotmail.com, macedane@ yahoo.com