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ASTROLOGY, PROPHECY AND THE BIRTH OF MODERN SCIENCE SEEN THROUGH THE LENSES OF RENAISSANCE ART

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ABSTRACT

As a follow-up to my previous studies in astrological representations in the XV-XVI century art of Veneto, I will shed light on the *fil rouge* connecting different experiences like the planning of astrological frescoes in Montagnana by Galeottus Martius, the collaboration between Giovan Battista Abioso and Giorgione in the painting of the famous Castelfranco Frieze and the visual prognostication of Giulio Campagnola's Astrologer, namely the artistic representation of highly complex astral theories applied to world history. This commitment to mundane astrology mixed with prophetic and apocalyptic doctrines emerges from an analysis of the whole catalogue of astral artworks in the Italian territory: 10 out of 240 of them reveal this unmistakable character and all are concentrated in the northeastern territory. There are many additional evidences that the recurring theme of astrological divination was in fact a widespread enterprise among humanists, philosophers, theologians and artists of the "Venetian Terraferma" at the time. Its discussion, reverberated across several generations and in nearby territories, reveals an informal "web" of study and research that goes well beyond the lecture halls of the local University, including poets, physicians, painters, heretics, goliardic secret societies and would-be revolutionary astronomers like Copernicus. In many features of the cited instances we find the typical rationalistic approach of the Aristotelian-Averroistic Paduan school inextricably linked to mysticism, neo-platonic magic and theology, a tradition going back at least to Pietro d'Abano and Biagio Pelacani. The same tradition, reinforced by a growing penchant for mathematical modelling and careful measuring, that will lead to the materialism of Pomponazzi, Telesius and Vanini and ultimately to the mature science of Galileo.

Instead of considering this process a slow but glorious liberation from superstition as too many historians still do, I will try to argue that the interest in astrological divination has been a fertile breeding ground for the Scientific Revolution and in particular for the rebirth of Heliocentrism, a controversial thesis in the vein of Dame Frances Yates, akin to that recently advocated by Robert Westman in his debated "The Copernican Question" (2011).

KEYWORDS: Astrology, Copernicus, Italy, Prophecy, Renaissance Art, Scientific Revolution

1. INTRODUCTION

The study of astral representations in the art of Late Middle Age and Renaissance shows how complex was the “science of the stars” at the time. There were many layers in the astrological doctrine accumulated since Antiquity, corresponding to different visions, philosophies and objectives (positional astronomy, genethliology, horary, catarchic, talismanic astrology, etc). Very often such complexity is overlooked or discarded by scholars and it should be clear that there was no such thing as an “astrology”, but many “astrologies” instead, converging in a multifaceted tradition full of contradictions and misunderstandings, sometimes even among its practitioners.

In this essay I will analyze astral art concentrating on Italy and on a particular strand of thought reflected by a number of sophisticated depictions: historical (or mundane) astrology, that is the study of the influence of the stars on lands, populations and on the destiny of human race (rather than on single individuals). This tradition, connected to ancient astral divination but developed especially by medieval arabic astrologers, was very often associated with joachimite prophecy and apocalyptic thinking.

Tracing this kind of representations along the territory one discovers that they are concentrated around the three major university centres of northern and central Italy, and primarily around Padua and the “venetian terraferma”, the same milieu where a strong mixture of prophecy and astral divination was massively produced, very often accompanied - at first sight paradoxically - by a rationalistic attitude steeped in averroism and aristotelianism that bordered sometimes on heresy.

Such a correlation (not necessarily a causation) is explored with a particular emphasis on copernican heliocentrism, probably developed or at least matured in Padua, a case where prophecy and mysticism met innovation without apparent conflicts.

The simultaneous presence of prophetic traditions tinged of astrology and of the mathematical component of the science of the stars in the same place and among the same practitioners should be considered highly meaningful: my final aim is to suggest a cohabitation, a kind of symbiosis, very probably even a fueling role in the birth of modern science.

2. ASTRAL REPRESENTATIONS IN ITALIAN MEDIEVAL AND RENAISSANCE ART

The starting point of my analysis was the construction of a database of astral art on the Italian territory between the XIIIth and the XVIIth century as complete as possible (Gandolfi, 2016), an upgrade of

the previous existing surveys (Mori, 1980; Gotze, 2012)¹.



Figure 1. Atlas of Astral Art in Italy (XII-XVII century)

The resulting atlas - a work in progress consisting at present of about 240 depictions - maps the diffusion of the Science of the Stars in Italy during the Late Middle Age and the Renaissance, allowing to trace territorially different traditions and different sensitivities on the part of courts, patrons, artists and practitioners of the field. Such a diversity is reflected in a variety of representations that will be studied in detail in a future essay, still in preparation. In the meanwhile the particular tradition of historical astrology has been isolated and analyzed in the database, relying on a series of markers that will be discussed below.

2.1. The Historical Astrology subset

The sample so far obtained is composed of only ten representations, i.e. about 4% of the entire database. However the emergence of such sophisticated, abstract and technical celestial doctrines in paintings or frescoes appears so surprising and improbable that even a limited number of cases constitutes an exceptional event. The very presence of the subset in a catalogue strongly dominated by conventional calendrical cycles indicates the relevance of historical astrology in the context of general culture, while the narrow distribution of its representations along the north-eastern Italian coast should be considered particularly worthy of attention.

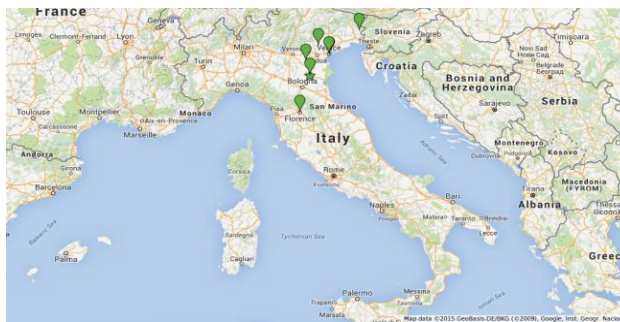


Figure 2. Atlas of the Historical Astrology Subset

¹ Gotze's catalogue is very wide but I opted for a more restrict definition of astral art, following the criteria of Giulia Mori.

2.1.1. Historical Astrology Techniques as Markers

In order to select the works of art meant to convey a message or a metaphor connected to the theme of historical astrology, reasonable markers of this doctrine have to be identified. Usually the artist or the creator of the iconographic program resort to a veiled symbolism or – less often – to explicit references to astrological techniques, with celestial charts, constellations and planetary symbols.

The main techniques used in the field of mundane astrology are: a) the so-called Revolution of the Year, i.e. the astral theme of the time of Equinoxes, often calculated also as the theme of the last sizigy preceding the same phenomena (Bezza, 2008); b) the *Magnus Orbis*, the arabic *Dawr* or *Mighty Fardar*, an abstract cycle of 360 years that associates the zodiacal signs to each planet in all possible permutations (Bezza, 2008); c) the Great Conjunctions Jupiter-Saturn cycle, whose duration of 960 years is divided in subcycles of 240 years in the same astrological triplicity (Buscherini, 2013); d) the Saturnian Revolu-

tions of 30 years, with great historical changes expected each 10 cycles (Buscherini, 2013); e) the Cycle of “*Trepidatio*” derived from the Alphonsine Tables, an oscillation of the equinoctial points from $\pm 9^\circ$ to 0° with a period of 4077 or 640 or 7000 years, often considered in addition to the Precession of Equinoxes (Ackermann Smoller, 1998); f) the Ptolemaic Astrological Chorography, connecting nations and stars (Feraboli, 1985); g) the Ptolemaic Theory of Luni-Solar Eclipses Influences (Feraboli, 1985); h) the Theory of Cometary Influences (Feraboli, 1985);

2.1.2. Description of the Sample

Each work of art of the selected subset includes an allusion to at least one of the cited techniques, sometimes to a mixture of them, while the dates of the representations range from about 1460 to 1538, a short interval of time during which the debate about prophecy and historical astrology was at its peak. I have studied in detail some of these artworks (located in the Veneto region) in previous essays, but here I offer a brief description of the whole sample:



Figure 3. *The Historical Astrology Subset*: a) Giulio Campagnola - “*The Astrologer*”; b) Anonymous - “*Three Astrologers*”; d) Giorgione - “*Frieze of the Liberal Arts*”; e) Sebastiano Florigerio - “*Saint Joseph and the Child*”; f) Giorgione - “*The Three Philosophers*”; g) Cosmé Tura - “*Annunciation*”; h) Cosmé Tura - “*Madonna of the Zodiac*”; i) Ghirlandaio - “*Nativity*”

1. *Madonna of the Zodiac* by Cosmé Tura now in Gallerie dell’Accademia in Venice (ca. 1460), and
2. *Madonna of the Zodiac* by Cosmé Tura now in Galleria Colonna in Rome (ca. 1460);

These two paintings clearly reveal the commitment of the artist and his entourage to the themes of mundane astrology, in a cultural centre as Ferrara, always characterized by a pervasive passion for the science of the stars (Vasoli, 1977). The Virgin with the Child is encircled in both cases by a thin and translucent zodiac where particularly prominent is the Sign of Virgo, emerging behind the sleeve of the Madonna in the former while central but occulted by her head in the latter. The reference is to conjunctionism, in particular to the ascending first decan of the Virgo, announcing in the starry sky the mystery of Incarnation (Golsenne, 2006).

3. *Annunciation in the enclosures of Ferrara Cathedral Organ by Cosmé Tura, now in Museo del Duomo in Ferrara (ca. 1469);*

The same artist produced this complex painting for the bishop Lorenzo Roverella, brother of cardinal Bartolomeo Roverella, whose secretary Filippo Bonaccorsi was at the same time fugitive being part of a conspiracy against Pope Paul II fueled on the basis of astrological prognostications. Guidoni and Marino (1979) identify a clear allusion to the Horoscope of Religions in the wing of the archangel eclipsing the pagan statue of Jupiter, while Campbell (1997) sees in the same sculpture Mercury instead (but the astrological meaning remains the same), and interprets the whole image as detached and ironic, almost critical towards the arabic doctrine of conjunctionism. Both authors consider the concealed Sphinx in the background as a symbol (appreciated or despised) of the ancient hermetic tradition.

4. *Astrological Fresco in the Rosario Chapel of Montagnana's Cathedral, probably by Angelo Zoppo (ca. 1483);*

This enigmatic fresco portrays at the same time a solar eclipse in Leo with its paranatellonta and a symbolic apocalyptic scenario where the constellations stand for the protagonists of a mighty culture clash, probably implying the final demise of Ottoman Empire. The sophisticated astrological technique employed for the prophecy is the Magnus Orbis cycle, integrated by a clever use of the Ptolemaic theory of Luni-solar Eclipses influences and by Ptolemaic Astrological Chorography. The author of the program, inspired by the dominican erudite Annius of Viterbo, was the humanist Galeottus Martius, connected to a contemporary paduan goliardic sect, the "Macheronica Secta" involved in quasi-

heretical astrological discussions besides crude jokes and the promotion of vernacular poetry (Gandolfi, 2016).

5. *Frescoes in the Sassetti Chapel by Ghirlandaio inside Santa Trinità in Florence (1482-85);*

This famous cycle has a hidden anti-astrological message, as demonstrated by Peter Porçal (1984). Each wall contains the reference to a different kind of divination, but in polemics with conjunctionism, astral prophecy is blatantly absent, evidencing its incompatibility with Christianity. The Child on the ground in front of the pagan sarcophagus in the Nativity scene symbolizes the complete refusal of ancient astral doctrines and justifies by negation the belonging of the cycle to the sample.

6. *Eastern Wall 'Frieze of the Liberal Arts, by Giorgione in Casa Marta-Pellizzari in Castelfranco Veneto;*

Indisputably the most complex of all the representations in the sample, the giorgionesque frieze is a real manifesto of Divinatory Arts (D'Amicone, 2010; Gandolfi, 2016), containing horoscopes, technical diagrams, sky charts, astrological talismans, etc. It refers mainly to the apocalyptic climate generated by the last three Great Conjunctions Jupiter-Saturn of the Watery Trigon cycle in 1484, 1503 and 1524 and is the result of the collaboration between Giorgione and the astrologer Giovan Battista Abioso, author of an influent *Dialogus in Astrologiae Defensionem* (1494) that contrasted Pico della Mirandola's *Disputationes Adversus Astrologiam Divinatricem* of the same year.

7. *'The Astrologer', an engraving by Giulio Campagnola created in the Venetian Terraferma and now in many collections, including the British Museum (1509?);*

Giulio Campagnola was a polymath artist, friend and collaborator of Giorgione, known especially for his fine engravings. This particular print² contains a visual prognostication referred to 1509 inscribed on an astrological disk: it relies on the technique of the Revolution of the Year and is generally connected to the calamities generated by the Saturn-Jupiter Conjunction of 1503 (D'Amicone, 1992; Gandolfi, 2014).

8. *'Three Astrologers', a drawing by an anonymous artist (monogram AG) of the Veneto School now preserved in Fondation Custodia in Paris;*

² I have ignored here the many copies of the theme because derivative and devoid of any astrological value.

This drawing, sometimes attributed to Campagnola, shows three scholars measuring a celestial globe (van der Sman, 2003). Equator and ecliptic are easily discernible, as the symbol of Saturn near the equinoctial point, a configuration referring to the technique of Saturnian Revolutions. An astrological analysis of the artwork is still lacking in literature.

9. *"The Three Philosophers", the masterpiece painting by Giorgione now in the Kunsthistorische Museum in Wien (1509?);*

One of the uncontested masterpieces of Giorgione, it is the topic of dozens of inconclusive analysis and interpretations in art history. The astrological subtext, however, is indisputable and comes from the parchment in the hands of the old philosopher on the right, containing at least a probable lunar eclipse, the symbols of Jupiter and Saturn and a nocturlabe. Whether a representation of three Magi or of three great astrologers symbolizing the Horoscope of Religions, the painting refers nevertheless to astral divination and to conjunctionism (Settis, 1978; Gentili, 1999).

10. *'Saint Joseph and the Child', a painting by Sebastiano Florigerio in the Cathedral of Cividale del Friuli (1537-38).*

This almost unknown artwork in Friuli displays an ancient zodiac in the ruined metopes of a pagan temple, standing above Christ and his human father (Tonetto, 2001). The zodiacal sequence begins with Pisces instead of Aries, alluding certainly to Trepidation, moving the vernal point across the former constellation since the divine birth. Even in this case a scholarly analysis of the astrological meaning of the painting is completely lacking.

3. PROPHECY AND ASTRAL DIVINATION IN NORTH-EASTERN ITALY

Between the XIVth and the XVIth century Italy, as many countries in Europe (especially Germany), was obsessed at all levels by astrological divination. This theme was widespread in Politics, Literature, Theology, Natural Science and even among scholars that we usually judge skeptical and highly rational³.

Many practitioners of the science of the stars were busy with this kind of mundane astrology, trying to confirm through celestial cycles their religious eschatology: Smoller Ackermann (1998) has called them "Apocalyptic Calculators", citing among them Pierre

d'Ailly, John of Ashenden, Giovan Battista Abioso, Jean de Bruges, Pierre Turrel.

As shown by Niccoli (1987) a real prophetic craze culminating with the famous deluge expectations for the Jupiter-Saturn Conjunction of 1524 was diffused in Italy at the turn of the century among peasants and citizens, clerics and laity, nobles and humble people, and it was highly permeable to those same astrological suggestions and prognostics. North-eastern regions were particularly affected and especially Veneto: here a strong academic tradition of astronomy and astrology mixed with an increasing interest in Joachimite Prophecies centered in Venice, as demonstrated by the wealth of prophetic pamphlets connecting Last Emperors, Angelic Popes and Sibyls to historical astrology (Reeves, 1969). This production, very common also in Germany, was dramatically boosted by the printing technology introduced by Gutenberg (Green, 2011). As revealing examples we cite the venetian Emperor/Pope Sibylline Prophecy of the second half of XVth century, alluding to a comet and citing Saturn as a malevolent influence (Gandolfi, 2016); the contemporary Gamaleon Prophecy, a clear blending of eschatological visions with conjunctionism (McGinn, 1979) and the seminal italian collection of sybilline prophecies published by Filippo Barbieri in 1482, where the oracle of the Sybilla Chimica included a famous text by the arabic astrologer Abu Ma'shar relating to the first decan of the Virgin (Smoller-Ackermann, 2010).

Numerous manuscripts and books of a more technical nature were produced at the same time in the north-eastern territories by influent astrologers, from the real bestseller *Prognosticatio* of Johannes Lichtenberger published in Venice many times, to the *Prognosticon super Antechristi Adventu* by Johannes de Lubeck, printed in Padua in 1474, to the already cited venetian *Dialogus in Astronomiae Defensione* by Giovanni Battista Abioso and the mysterious *Prognosticon ad Eversione Europae* of 1490-95 by Antonius Arcuatus, a ferrarese student of the science of the stars. All these works developed astrological divination creating theological narratives reflected in the sky and the same tendency extended along the Adriatic coast, including prominent texts as the bolognese *Questio de Fine seu Durabilitate Mundi* (1481) by Johannes Paulus de Fundis and the famous *Pronostica ad Viginti Annos duratura* by Paul of Middelburg, published in 1484 in Urbino, and even across the Apennines, in Genoa, with the *De Futuris Christianorum Triumphis* (1481) by Annius of Viterbo.

This widespread joachimism full of religious overtones and mixed with astrology could be perceived today as a sign of a general sense of paralyzing and impending doom, of a renounce to act on the verge of the final crisis. On the contrary, there is ample

³ Pico della Mirandola, for example, refused in the end all astrological techniques but resorted to Kabalah to describe history and the cosmos, calculating in his "Conclusiones Cabalisticæ" the exact date of the end of the world.

evidence that such apocalyptic thinking was not associated to purely passive fatalism: it maintained instead a fundamental ambiguity about the duration of the interregnum between the coming of the Antichrist and the real Judgement Day or it postponed *tout court* the end of the world through further astronomical cycles, provoking an oscillation between the necessity of pro-Church activism in the face of the coming Apocalypse and an exciting sense of deep renewal of society against clerical corruption and machiavellian political manoeuvres, the so-called *Renovatio* (Vasoli, 1981).

4. ARISTOTELIANISM, AVERROISM AND THE BIRTH OF MODERN SCIENCE IN VENETO

Many scholars indicated in the paduan Aristotelian milieu the principal breeding ground for the Scientific Revolution finally started by the new physics of Galileo (Randall, 1940; Wallace 1984) and by the experimental medicine of Girolamo Fabrici, Vesalius and William Harvey (Berti, 1997), focusing on the same territory we have considered so far, mapping the simultaneous diffusion of astral art, mundane astrology and astrologically tinged prophecy. While the late Charles Schmitt scaled down such paradoxical but intriguing idea (Schmitt, 1983), a strong sensation of affinity with the general tenets of later natural science still emanates from some of the scholars and philosophers that gravitated around the paduan university, in particular the so-called “averroists”.

As amply remarked by historians of philosophy (Akasoy and Giglioli, 2013), such a label is an invention: almost all Aristotelian scholars were influenced in one way or another by the commentary of Ibn Rushd, but with time the term “averroists” became synonym of “thinkers who pursued Aristotelian philosophy apart from theology and whom we might better describe as secular Aristotelians” (Kristeller, 1980). This very loose, heterogeneous and long lasting school of thought included personalities as different and remarkable as Peter of Abano, Blaise of Parma, Galeottus Martius, Pietro Pomponazzi and Giulio Cesare Vanini, all on the brink of heresy and atheism. Their inclination towards rationalism and determinism came actually from many different influences (often mediated by arabic culture) and combined invariably with a strong astrological vision as a unifying theory of nature and the cosmos, able to explain politics and religion through conjunctionism and especially through the theory of the so-called Horoscope of Religions. The resulting mechanism, even polluted by extravagant beliefs, has many analogies with science, with an increasing attention for nature and experimentation and with a strong respect for mathematics.

The majority of averroists of this kind, actually, was more involved in logic or in heuristic medicine than in true mathematics applied to physics, but the exception – and the bridge with the academic world of “professional” mathematicians – was again the science of the stars. Next to many qualitative thinkers we find in fact in the same paduan context also astrologers like Abioso with his continuous exaltation of new instruments and accurate measurements in the footsteps of Regiomontanus (Pastore Stocchi, 1987) or scholars like Girolamo Fracastoro and Giovan Battista Amico (Swerdlow, 1996), trying to build an homocentric theory of the cosmos rigorously based on mathematics in order to effectively describe planetary movements. Even humanists without a specific mathematical training like Galeottus Martius invoked the precision of astronomical tables in order to reform astral divination.

But the seduction of mathematics applied to the structure of the cosmos was at the time characteristic in particular of pythagoreanism and neo-platonism, doctrines diffused and appreciated especially in Venice, and not necessarily and always considered opposed to paduan aristotelianism. Mystical numerology was here inextricably mixed with a strong esthetical longing for harmony and symmetry, whose far-reaching consequences for modern science would have been especially evident in the cosmologies of Copernicus and Kepler. And Copernicus, indeed, while maturing his ideas passed his last years in Italy between Padua and Ferrara, which is certainly not a coincidence.

5. THE COPERNICUS CASE

The paradigmatic and seminal role of the copernican revolution in the birth of modern science makes the stay of Copernicus in Padua particularly relevant for our discussion and the (re)birth of Heliocentrism offers a wonderful example of the inextricable mixture of metaphysics and analytic-mathematical approach that characterizes the paduan melting pot with his omnivorous humanism and philosophy.

Only in the XXth century the importance of such a scenario has painstakingly emerged from local researches, that have slowly shown the academic milieu of Copernicus as well as his probable acquaintances (Birkenmajer, 1922 ;Nardi, 1959; Bilinski, 1983; Pepe, 2003). Besides Fracastoro, Pomponazzi, Tiriaca and other professors, he may for example have met (or just read) Celio Calcagnini in Ferrara and he surely knew of Giorgio Valla in Venice.

We are here particularly interested in the evidences of his involvement, however indirect, in the astrological side of the science of the stars and in the mystique of pythagoreanism and neo-platonism that could have supported it. I will list them here: 1) Co-

pernicus' apollonian seal, alluding to a form of solar cult (Mossakowski, 1973); 2) his collaboration with the prognosticator Domenico Maria Novara (Bonoli, 2012); 3) his famous citation of Hermes Trismegistus in *De Revolutionibus* I.10 ; 4) his implicit assent on Rheticus digressions about astrology in *Narratio Prima* (1540); 5) the mention in a letter of 1535 by Bernard Wapowski of a now lost almanac written by himself.

Yet focusing on the Paduan stay we can also add the meaningful paduan (or ferrarese) observations of the Great Conjunction of 1503/4 (discovered in his handwriting in a copy of the Alphonsine Tables by Owen Gingerich in 1973), while a note on a copy of Stoeffler's Almanach by Martinus Biem of Cracow reports a date for the third conjunction of June 1504 "*secundum Copernicum*", meaning that original observations were circulating and that the heliocentric model was at such an advanced stage of elaboration that it allowed the calculation of ephemeris (Birkenmajer, 1922). To all these evidences we should add a much overlooked discovery by Sergio Bettini (1975), able to disclose new perspectives to our knowledge of Copernicus frequentations: the probable portrait of the scientist in the "Marriage of the Virgin", painted in 1505-7 by Campagnola in the paduan Scoletta del Carmine. The link with Copernicus allows to infer the acquaintance with other figures of Campagnola's circle: Luca Gaurico (a prominent astrologer), Giorgione and Abioso⁴, connecting further heliocentrism and prognostications.

The first scholar to propose with energy the propulsive role of Hermeticism and Pythagoreanism in the Scientific Revolution and in Copernicanism was Frances Yates, but after many controversies her thesis has been superseded by the awareness of a multiplicity of practices and different approaches in the Natural Magic/Science of the period that taught historians to be more nuanced and cautious in front of generalizations⁵. Nonetheless her intuition of "metaphysical" driving forces behind Science - in opposition to purely internal approaches - remains more vital and valuable than ever. To the point that one of her critics - the historian Robert Westman - has recently proposed another controversial theory about the genesis of *De Revolutionibus*, apparently confirming the scenario discussed so far: Copernicus could have been motivated in his research program by Pico's *Disputationes adversus Astrologiam Divinatricem*. In order to defend the science of the stars as a whole

from such an attack, he would have chosen to re-found the discipline starting from planetary order (as proposed also by Goldstein, 2002). The new order reflected in fact a satisfying symmetry in the ptolemaic astrological qualities (heat, cold, moisture, dryness) in addition to a well-tuned sequence of velocity-distance relations (Westman, 2011).

6. ASTRAL DIVINATION AND SCIENCE

More than a simple heir of aristotelianism or anti-aristotelianism or neo-platonism, Science was the result of the complex dialectic of many components in this Veneto melting-pot, a scenario that irradiated infectious ideas across Europe. Between these ideas heliocentricity had a crucial role as the real building block of the Scientific Revolution, confirming the igniting impact of astral divination both as a main intellectual problem in the field of natural science and as a religious and spiritual concern for individuals and for the Church. Together with other metaphysical stimuli as hermeticism or pythagoreanism, the irresistible fascination for historical astrology was a driving psychological force behind the scene, exactly in the sense advocated by Frances Yates: no technical analysis of mathematics and methods may acknowledge such a key component of the new philosophy of Nature, no internal history of science could calculate its ethereal but essential weight.

It is no exaggeration to state that astral divination was the reason of the centrality of the science of the stars during the late Middle Age and the Renaissance: whether enthusiastically accepted or vehemently denied it was always considered an horizon of meaning for human history itself, encompassing religion, philosophy and science and guaranteed by Nature. That is why, with a few relevant exceptions, all philosophers and astronomers of the time tried hard to revive it one way or another, even when reforming the entire structure of the cosmos (the case of Rheticus, when in the *Narratio Prima* proposes a new technique of mundane astrology based on the motion of the center of Earth eccentric) or when recuperating a pure ptolemaic tradition (the case of Girolamo Cardano, that could not resolve to renounce to arabic conjunctionism in commenting the *Tetrabiblos*). In light of such a centrality in the history of ideas and of territorial coexistence (the paduan stays of giants like Copernicus, Regiomontanus, Vesalius, Harvey and Galileo highlight the absolute relevance of the location), an influence of astral divination on the long and complex process of creation of modern science should have been considered before, but science historians are blinded by a Whig History paradigm and still convinced that astrology is a superstition not worth of a careful analysis.

⁴ Abioso was also the author of the preface for the Epitome of Regiomontanus, a book Copernicus used intensively.

⁵ For a fair review of Yates thesis and its opponents in the historiographical context of the Scientific Revolution see Floris Cohen (1994).

Is it really so paradoxical and unbelievable that astral divination may have contributed to the birth of Modern Science? Considering its many connections in the same historical period to instances of innovation – discoveries or inventions – almost everywhere in Europe, the answer should be surely negative. We give just three impressive examples: the feat of Christopher Columbus, whose manuscript *Libro de las Profecias* demonstrates the importance of Pierre d'Ailly's prophetic-astrological influence as a stimulus for the voyage to the Indies (Moffitt Watts, 1985); the printing of a book about Sibyl's Prophecies among the first experiments of Johannes Gutenberg with a movable type system (Green, 2011); the creation of logarithms by John Napier for calculating the date of apocalypse according to St. John (Fava, 2013).

But going back in time, evidences of a propulsive role of apocalyptic astrology become more compelling: there are many crucial medieval figures that combined a *Weltanschauung* tinged of astral divination with experimentalism and proto-scientific innovations, such as Robert Grosseteste, Albertus Magnus and Roger Bacon in the XIIIth century, all committed to conjunctionism (Thorndike, 1923), and Jean de Roquetaillade and Arnald of Villanova in the XIVth, practicing astral prophecy and alchemy as weapons against Antichrist (De Vun, 2009). On the other hand, even under the pressure of Enlightenment and Positivism, even in our age of unopposed secularism, Science has never ceased to be propelled by metaphysical or religious stimuli (Burr, 1925), but at this point we have reached the territory of sociology of science and we conclude the discussion.

7. CONCLUSIONS

Starting from an updated catalogue of Italian astral art I have identified a subset of sophisticated representations dedicated to historical astrology, concentrated in the north-eastern region, confirming the crucial role of such a doctrine and its influence in

different milieus. The analysis of this sample reveals a network of study and research that goes beyond the halls of the local universities, including poets, cardinals, painters, secret societies and astronomers but at the same time it is firmly rooted in the longstanding aristotelian tradition of Paduan academism, enriched by neo-platonism. I have suggested on the basis of many correlations that such a large interest in mundane astrology, excited by its confirming role in the domain of religious prophecy and apocalypticism, may be considered a key ingredient in the birth of modern science rising in the same location, as the Copernicus case seems to emphasize.

In this sense the contested Yates thesis has been insightful indeed: it helped appreciate the impact of metaphysics on the apparently most neutral and objective of human endeavours, but at the same time it emancipated as much as possible the consideration for astrology and magic in history. The first sign of attention for this realm in the field of cultural studies was actually Aby Warburg's project of analyzing the psychological meaning of astrology in the history of art and culture. But Warburg, however brilliant and passionate about the theme, despised that ancient astral worship and considered it a relic of the past to be overcome. "*Athens must always be conquered afresh from Alexandria*" he said, implying for Egypt the role of symbol of all superstitions and religious mysteries, in opposition to Greece as the home of rationality. But Alexandria was at the same time the cradle of mysticism and the place where Mouseion and Library stood as temples of knowledge in Antiquity, without contradictions. As convincingly shown by Russo (1996), the first scientific revolution was the Hellenistic one, a conquest never deterred by eastern spirituality and metaphysics. On the contrary one could speculate about the necessity of both modes of thought in developing Science, re-phrasing Warburg's aphorism in the light of this dialectic: "*Athens needs always to be stimulated afresh by Alexandria*".

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