

# CULTURE AND COSMOS

*A Journal of the History of Astrology and Cultural Astronomy*

Vol. 7 no 1, Spring/Summer 2003

Published by Culture and Cosmos  
and the Sophia Centre Press,  
in partnership with the University of Wales Trinity Saint David,  
in association with the Sophia Centre for the Study of Cosmology  
in Culture,  
University of Wales Trinity Saint David,  
Faculty of Humanities and the Performing Arts  
Lampeter, Ceredigion, Wales, SA48 7ED, UK.

[www.cultureandcosmos.org](http://www.cultureandcosmos.org)

Cite this paper as: Galileo Galilei, 'Galileo's Correspondence',  
trans. Julianne Evans, with commentary by Grazia Mirti and Nick  
Kollerstrom, *Galileo's Astrology*, special issue of *Culture and  
Cosmos*, Vol. 7 no 1, Spring/Summer 2003, pp. 73-84.

British Library Cataloguing in Publication Data  
A catalogue card for this book is available from the British Library

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ISSN 1368-6534
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## Chapter 7

# Galileo's Correspondence

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Translated by Julianne Evans with commentary by Grazia Mirti

**Editor's Note.** The letter-extracts are from Volume 10 of Favaro's *Opere* unless otherwise stated, with the numbers given by Favaro. The commentary is from *The Astrological Work of Galileo*, Grazia Mirti, 1992. A part of Galileo's 1604 comet lecture is also included, as pertinent to a letter from Brenzoni.

### 87. Giovanfrancesco Sagredo to Galileo at Padua, Venice, 18 October 1602

I will convey the declination [*declinatorio*] to Paolo and will take the message as you wish. I tried out the declination as you indicated ... I told that gentleman about the nativity of which you wrote to me. I will leave it to him to get in touch with me, for my part I am at your convenience.

The birth of Moresini, who fell from the bell tower, was in the year 1586, on the 28<sup>th</sup> of July, at the sixth hour, rung by the Friars between the third and the ninth. The day of the 28<sup>th</sup> is noted in the *Avogaria* and the book of his father. His mother, nevertheless, affirms that he was born on the 27<sup>th</sup>, on the Wednesday, two days before [the day of] Saint Martha. The boy is healthy and fortunate; already at five years, 3000 ducats have been left just to him and not his brothers, even though they are older. I wanted to look at the ephemerides to find the day and I saw that the 27<sup>th</sup> was a Sunday...

**Grazia Mirti comment:** The Venetian nobleman Giovanfrancesco Sagredo, well-known for his close friendship with Galileo, was one of Galileo's regular clients. One of his letters is kept in the Campori archives in Modena. In a style which suggests constant, similar requests, he asks Galileo to make an astrological analysis for someone whose data he encloses for a correct execution of the calculations.

### Galileo's Supernova lecture December 1604

On 10 October 1604 a certain strange light was first observed in the heavens. At first it was quite small, but soon it was visible even by

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Galileo Galilei, 'Galileo's Correspondence', trans. Julianne Evans, with commentary by Grazia Mirti and Nick Kollerstrom, *Galileo's Astrology*, special issue of *Culture and Cosmos*, Vol. 7 no 1, Spring/Summer 2003, pp. 73-84.  
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daylight, surpassing in brightness all fixed and wandering stars with the exception of Venus. It was red as well as sparkling. It gave off waves of light which seem both to kill and set aflame, more than any of fixed stars and the dog star itself. It had the splendid brilliance of Jupiter and the redness of Mars, which is like fire. The contractive quality of these terrible rays announced destruction, as if from the boiling redness of Mars, whilst the expansive quality of these rays gave forth Jupiter's bright lightening. It came forth as the due fruit generated by the intercourse of Mars and Jupiter. In almost the same position as the conjunction had been predicted the new star appeared to be born. For on the ninth day of October, at about five hours in the morning (or before noon) Jupiter and Mars were conjunct, in the vicinity of Saturn, setting at eight o'clock in the evening in the West. The star was located where previously no conspicuous star had been observed, except those three already mentioned, however on the 10th day of October this new star was first observed ...

**Nick Kollerstrom comment:** The New Star (a galactic supernova) was first seen on 10<sup>th</sup> October at 22° Sagittarius, during a Mars-Jupiter conjunction at 19° Sagittarius, and was a mere 3° from the ecliptic. In December Galileo gave three lectures in the Great Hall of Il Bo: 'the crowds were enormous, more than three hundred crammed into the small space... mark[ing] the first public appearance of Galileo as an astronomer' (1).

### **115. Ottavio Brenzoni to Galileo, Verona, 15 January 1605**

Around 15 October 1604, during the occultation of the Sun (2), I suddenly saw a new light that resembled a star ... equal to or bigger than Jupiter, almost of the same colour, but sparkling. I would have been surprised myself, at the time (I confess) for the wonder of it, if I hadn't believed it to be a highly bright flame that is commonly said to be a comet; and perhaps ... of greater wonder, when still I could doubt that perhaps such splendour had newly appeared in the sky, remembering having read that in the year 1572 a similar one had appeared in Cassiopeia. At the time, to find a reason to dispel my doubt and help me become, if not clear, at least less confused, I observed the distance between Mars and this new light with a commonly opportune instrument, and saw that it was if not greater, then at least equal, when it was high above the earth the distance taken two hours later, that is, at the setting of it. It was a clear enough reason for me (if other material conditions did not intervene) that it was not under the circle of the Moon, because in this case the last distance taken would have been greater than the first, as

could be observed by the occulted figure [not included]. For this I suppose how it really is, that Mars does not have any different aspect, that is, seeing it from the same place standing on the surface of the Earth or from its centre: but for whatever reason (or region of air or fire?), it could not be this because of its nearness: if it had been in the air, the distance would have been seen to be greater, and set more than it should have (?), in my opinion, for the separation of nearly two degrees, even if it had been almost immediately below the Moon, as I think one can deduce from the secant and tangent lines. Having, therefore, to be above the Moon, for the aforesaid reason, I am forced to believe that it is in the 8<sup>th</sup> heavenly sphere; if it had been in the heavenly sphere of the planets, it would perhaps have had one of their motions, which, however, I never saw in the days I observed it. But, if you would like to say that it could also be in a deferent of the apogees of the three superior planets, I would not deny it, because anyway the fact remains to convince us how celestial material can show these new appearances ...

I would add that if such sightings and new stars as these did not happen from time to time, we could easily negate that there was other material in the sky, apart from only the bodies of the planets and stars. It would therefore be ungrateful to reject these sightings, which serve to teach and assure us of such sublime things.

You will perhaps be a little surprised, because so rarely does one see such a sight. It is rarer still for such a concurrence and union of planets to occur like this in the sign of Sagittarius, in whose trine it can be calculated that in the space of 900 years there will not be another conjunction of Jupiter and Saturn together with Mars (3), even though a heavy and superior planet. But because conjunctions (?) occur more frequently, but of lesser value, so they still produce stars like this, but much smaller in size. It is three years since a small one appeared in the Cygnus constellation (4) and Mr Tycho, attentive observer, once found more than ten or twelve above the number predefined by Ptolemy; but they are not so marvellous, because not every one can be observed, for their small quantity (5).

**Grazia Mirti comment:** When Galileo was a professor in Padua he maintained a constant correspondence with Ottavio Brenzoni, a professional astrologer in Verona, whose opinions he held in great esteem. They exchanged opinions on both the correctness of the planets' positions and the interpretation. Unfortunately only Brenzoni's letters to Galileo have been found and not Galileo's.

### 130. Ottavio Brenzoni to Galileo at Padua, Verona, 19 December 1605

I will start by saying a few words about the chart: the first thing I notice is that according to the ephemerides of Carelli, it could easily be full of mistakes, like Mercury being out by ten degrees; but if there were little difference with [the ephemerides of] Stadio (which I haven't been able to look at, for lack of time) (6) ...

The temperament of this gentleman gives him a little catarrh in the head, initially caused by a stomach indisposition: this also causes slight vertigo, some problem with the eyes, either a certain blurriness or other. He could also suffer from nosebleeds, perhaps from the left side, for reason of his spleen, which can also give him some trouble: he is also prone to contracting little ulcers from syphilis (*mal francese*), that could erupt in his privy parts, the colon or his legs (I do not think it is worth going into this in depth). This constitution is not very far from indicating a little sciatica. Finally, it is reasonable to think that he could suffer from corporeal fluxes such as diarrhoea and dysentery. The end of life is not violent, but natural; there is, however, the risk of (getting) a violent kick from a quadruped or fall from a horse with the risk of breaking a leg or receiving a blow to the head. He could also suffer damage to his eye but, I hope, without the risk of losing it. The Path of Fortune is perhaps doubtful if it falls in Capricorn or not, but if it were in Pisces it would signify the contrary; it would be good for many things, but at great expense, as much for [piezarine] as at the hands of governors and sentences, and even though it does not indicate banishment, it is close enough. The main causes of this misfortune lie in his friends and companions. The honours would be great if that concubinage of Mars did not lead to frequent concubinage with friends, tending to damage his reputation! The Ascendant at the antiscia of Saturn, if it were there at about 29,† could result in falls, danger from animals, bites and fire, with melancholic infirmity. Then Mars at the MC at about age 23, if it signifies a fight, would bring dishonour and maybe his fleeing, leaving friends; and from here, things being like this, one could easily do the directions correctly.

**Grazia Mirti comment:** In [this] letter Brenzoni comments on the unreliability of some ephemerides by Caselli. These ephemerides, he says, can show positions of Mercury which are out by ten degrees, but since he was out of town he could not use more reliable texts. In that same letter Brenzoni comments that 'the Moon may not be in Capricorn, or if she were in Pisces it would not be a signifier to the contrary'. There are also some

references to possible brawls due to Mars, at about the age of 23. The planets are indicated with their graphic symbols and not with their names. This is evidence that Galileo and Brenzoni were used to frequent exchange of correspondence and that for Galileo this professional astrologer was probably a reference point he applied to for some advice, when the decoding of the birth charts seemed too obscure.

† This could mean: when the Ascendant by progression reaches the antiscion of Saturn at the age of 29 (Mike Edwards).

**201. Curzio Picchena to Galileo at Padua, Florence, 18 December 1608.**

When you were about to leave here I told you that I would respond by letter to some things your friend from Verona [Brenzoni] had written you about the birth of my daughter, because it has raised doubts over whether the nativity hour is correct.

First, he says that this year her life would be in danger, particularly in the month of September; and to this I say that the said daughter has not had any considerable illness, and it is already the end of the eleventh month. Then he says that she would receive things from her ecclesiastical relatives; and I answer that I have no relatives left, so that nothing can come to her now nor in a hundred years from now, neither from my side of the family nor that of my wife. Therefore, on account of the doubt about the time, could you please ask your friend if he could see to adjusting the time of birth himself, because I hear that my daughter was born in such a way that for half an hour or more she was thought to be dead or that in a brief while would die because she had turned black and made no movement, giving no sign of life, until after having washed her in warm water, when she came to. This danger occurred because she was born sheathed with the cord around her neck, which nearly suffocated her. From this incident you can understand how the notice of her birth to those waiting outside the room to note the hour could have perhaps been delayed. The above mentioned danger seems important enough to me to be able to rectify the nativity, given that nothing else has happened up to now.

**Grazia Mirti comment:** In a letter sent to Galileo, Curzio Picchena wrote that he had applied to Brenzoni for the chart of his daughter who had just been born, and asked Galileo to write to Brenzoni asking him to do the job again. In fact, Brenzoni seems to have been quite heavy-handed, announcing possible risks of death and impending dangers, although the young girl was

in very good health. Besides, the astrologers had predicted that she would receive an inheritance from some clergymen who were supposed to be her relatives, whereas the family had no relatives of any kind. Briefly, Picchena chose Galileo to express his dissatisfaction and regret about the content of the horoscope. But his faith in astrology was not at all affected; on the contrary he was sure there must have been a mistake in the calculation or interpretation, which did not alter his conviction of the validity of judicial astrology.

**204. Galileo to Cristina of Lorraine (in Florence) Padua, 16 January 1609.**

It has taken me so much time to do the calculations using the Pruteniche Tables, and amend the motion of the Sun with those of Tycho Brahe, for both of the dubious times of birth of His Serene Highness, so that up to now I have not been sure of being able to say anything resolute regarding your doubt. Comparing past incidents with one chart and then the other, it would seem to me most likely that H.S.H. was born on 30 July 1549, rather than 19 July 1548, so that H.S.H. is now in his 59<sup>th</sup> year and not in his 60<sup>th</sup>. His climacteric year is therefore in two and a half years' time and not in 18 months. I hope H.S.H. will happily get through this time with the help of his Divine Lord, in whose hands those who are destined to rule the people principally reside.

**Grazia Mirti comment:** On the occasion of the last illness of the Grand Duke Ferdinando I, the Grand Duchess Cristina of Lorraine wrote to Galileo asking him to do some research – finding out his exact day of birth in order to have the possibility of calculating the critical year of death, as the habit was with all the ancient astrologers. ... Galileo faced this problem with great seriousness; he said that making the calculations with the Prutenic tables had taken a long time, that he had corrected the motion of the sun by means of Tycho Brahe's calculations, and that he had verified two different hypotheses in order to find out the more acceptable date. He concluded with a very favourable prediction: the Grand Duke would recover soon. Unfortunately Fernando dies 22 days later – thus sensationally belying, if not the calculations, at least the conclusions of Galileo's interpretation (7).

**213. Galileo to the Reformers of Padua University at Venice, Padua, 9 March 1609**

By the very prudent determination of the first organisers of this University it was ordered that the lecturing of Mathematics, currently exercised by me, would be at one time only, and not together with other lectures, so that doctors and philosophers, needing to know about many

things, would be able to listen to this (lecture) without missing other lessons; the Mathematician agreed to lecture after all the other hours, so as not to impede neither doctors nor philosophers from all the other hours that keep them occupied.

**249. Galileo to the Reformers of Padua University at Venice, Padua, 4 November 1609**

It appears to the first regulators of the University of Padua that the lecturing of Mathematics, which is as necessary for doctors as it is for philosophers, would be held at such a time that neither one nor the other would be inopportune, so that to hear one the students would not have to leave the other.(8)

**Kepler to Galileo, Prague, 19 April 1610, Postscript (*Opere*, Vol. 3)**

Wolfgang Satter of Basel issues a 'Mercury' to show astrologers that an aspect of 30° has an effect. I congratulate him on his personal acquisition of the truth ... I myself have used this aspect since 1603. See my *Tertium Interveniens* – available at the same book fair. I called it the 'semi-sextile' (12).

**Nick Kollerstrom comment:** Kepler wrote to Galileo in response to his *Sidereus Nuncius*, and Galileo published this letter because it endorsed his views. It gives what could be the first theory as to how craters on the Moon were formed: large, slow-moving selenites found the Sun's heat oppressive, and erected structures to protect themselves against it. They dug these in circles, so they could hide in the shade. Kepler also explained that the four 'new planets' around Jupiter were ordained not to exert an astrological effect upon Earth, because they stayed too close to Jupiter for that, 'but undoubtedly for the Jovian beings who dwelt on Jupiter'. In a final postscript Kepler alludes to a new celestial aspect coming into use:

**982. Tommaso Campanella to Galileo (in Florence) Naples, 8 March, 1614, Vol. 12**

For your infirmities I offered to do what I could. You said that you would write to me about their history and give me your nativity, but you did not. Do not disdain, Sire, the advice of friends, because *non omnia possumus omnes*. Anassagora looked at the stars, and he did not do it. Our Prince says he asked for his nativity from you Sire and that you did not want to give it to him saying that you do not believe in it. I am surprised, because, if you, Sire, do not believe in it, then why did you say to the Grand Duke in your epistle that Jupiter in his geniture gave him it etc.? So you have

ridiculed it. *Absit*. It is not right, Sire, as a poet, to take advantage of false opinions believed only by the common people ... however I am sure this doctrine is full of fallacy but nevertheless very divine things are in it...

**Grazia Mirti comment:** Tommaso Campanella wrote from the prison of Naples to Galileo, saddened and distressed by his illness 'as to your infirmities I offered to do what I can ...'. Campanella exhorts Galileo, but we can understand very well that he was quite depressed and unable to hope for a positive solution to his misfortunes and is then afraid of additional unfortunate predictions, perhaps accompanied by climacteric years or comets, which in those times were thought to cause death, misfortune and distress.

**Galileo to Monsignor Piero Dini, Florence, 23 March 1615, Vol. 5**

With regards to the first thing you asked me, what at most could be said about Copernicus' book, it would be to add a postscript, that his doctrine was introduced to save appearances, in the same way that others would introduce eccentrics and epicycles, without believing that it is really so in nature, I say to him (submitting myself to someone who knows more about it than I, and only out of zeal that what is to be done should be done cautiously) that, as for saving appearances, the same Copernicus had already done the hard work, and satisfied the astrologers according to the habit and in the manner of Ptolemy; but then, putting on the philosopher's hat, and considering whether such constitution of the parts of the universe could really exist *in rerum natura*, and seeing that it is not so, and seeming also to him that the problem of the real constitution was worthy of being researched, he started his investigation of this constitution ...

... in the Hebrew text, in the place of *dawn (aurora)* it reads *light/day (lume)*, insinuating that light which was created a long time before the Sun, much weaker than that received, fortified and diffused by the body of the sun. This sentence alludes to the opinion of some ancient philosophers who believed the splendour of the Sun to be a concourse in the centre of the world of the splendours of the stars which, being placed spherically around it, shine their rays which, streaming through and intersecting the centre of it, grow and increase their light a thousandfold; so that the light thus strengthened is reflected and spreads itself rather more vigorously, full of virile so to speak and lively heat, and so gives life to all the bodies which orbit its centre; so that it is rather like the heart of an animal in which there is a continual regeneration of vital spirits which sustain and give life to all the members (9), but it also takes in nourishment and food from outside itself, otherwise it would perish. So

the Sun, likewise, while taking its food from outside itself, conserves that source from which this light and prolific heat continually derives and spreads, that gives life to all that resides around it. Even though I could produce many attestations of philosophers and serious writers about the amazing force and energy of this spirit and light of the Sun, spread throughout the universe, it would be enough for me to cite the *Beato Dionisio Areopagita* in the book *De divinis nominibus*; which states *even so doth the light... draw together all things and attract them unto Itself: those that can see, those that have motion, those that receive Its light and warmth, those that are merely held in being by Its rays; whence the sun is so called because it summeth all things and uniteth the scattered elements of the world.* E poco più a basso scrive dell'intesso: *For if our sun, while still remaining one luminary and shedding one unbroken light, acts on the essences and qualities of the things which we perceive, many and various though they be, renewing, nourishing, guarding, and perfecting them; differencing them, unifying them, warming them and making them fruitful, causing them to grow, to change, to take root and to burst forth; quickening them and giving them life, so that each one possesses in its own way a share in the same single Sun – if the single sun contains beforehand in itself under the form of an unity the causes of all the things that participate in it; much more doth this truth hold good etc.* (10)

**1308. Alessandro d'Este to Galileo (in Florence) Modena, 2 March 1618, Vol. 11**

Confident that you will promise me this favour, I am sending you the attached note, beseeching you to draw up the nativity, according to what you will see in it. With regard to this, Sir, the obligation I will have to you in exchange for this pleasure will be as much as the esteem I have of your virtue. I wish you great prosperity.

At your pleasure, Cardinal d'Este.

**Grazia Mirti comment:** Cardinal Alessandro d'Este applied to Galileo with great confidence asking him to issue his chart. In exchange for this he promised to do anything that might please him. The letter was published for the first time in 1872.

**2022. Michelangelo Buonarroti to Galileo (in Rome). Rome, 3 June 1630, Vol. 14**

Finding me face to face with the Cardinal [Francesco Barberini] in his room, and talking about his young nephew and of some difficulty regarding his birth, not without a little fear of danger, I had the possibility

of bringing up the slander invented against you. Before I could say anything he [the Cardinal] brought it up before me, saying that it was someone (look at how the malicious recklessly attack) who had spoken about you in the same way that you already know by other means. Cutting the conversation short, the Cardinal said that Mr Galileo did not have a better friend than that of the Pope himself, and that the latter knew who he [Galileo] was, and that he had no such things in mind; and if he showed himself to be completely against and was irate with him. And while I showed off the roguery of such malicious people and those who do such things, he told me that it was not done to directly offend you, but he himself, and that he who spoke badly had to take into account that a great mathematician had come to Rome, one would argue: therefore a great astrologer; and on him were founded his fabulous inventions. And then he added, to show the malicious that he did not believe these things, that he particularly wanted you to dine with him ... (11).

**2384. Galileo to Elia Didati in Paris, Florence, 15 January 1633, Vol. 15**

I am obliged to reply to two letters, one from your illustrious self, and the other from Signor Pietro Gassendo, written the first of November last, but which did not reach me until ten days ago; and because I am extremely busy and laboured, I hope that this will serve as a reply to you both, given that you are dear to each other and that the letters contain the same things, that is, the receipt of my Dialogues, sent to both, that you promptly read and gave your approval and applause, for which I thank you and am much obliged, but I await a more critical and liberal judgement, after you have had time to re-read it more calmly, because I fear that you will find many things to contest.

I am sorry that the two books of Morin and Fromondo did not reach me until six months after the publication of my Dialogue, because I would have had the occasion to praise them both, and also comment on some details, one in particular in Morin, and another in Fromondo. In Morin, I am amazed by the very great esteem he has for judicial astrology, and that he expects to establish with his conjectures (which seem to me quite uncertain, if not to say very uncertain) the certainty of astrology. It would be a really admirable thing if, by his shrewdness, Astrology were placed in the higher seat of human science, as he promises. I shall wait with great curiosity to see this marvellous novelty. With regard to Fromondo (who appears to be a man of great naivety) I wouldn't have wished him to have made, in my opinion, the serious,

though quite common, mistake of first ridiculing and deriding those who hold the Copernican views to be true, and then to refute them using the authority of the Scriptures (which seems most inopportune) to lead to the conclusion that they are little less than heretical.

**Grazia Mirti comment:** Morin de Villefrance was a famous French astrologer who had been appointed professor of Mathematics at the Royal College of France by Louis XIII; the king was very grateful to him because he had predicted his full recovery from a very serious illness. Morin was a convinced astrologer, very argumentative, and the author of many important publications, among them the huge *Astrologia Gallica*. He is described by Galileo, who received many letters from Morin (who signed himself Morinus), with these words: 'I am surprised at Morin's very great esteem in Judicial astrology...'. In any case, Galileo's answers are quite infrequent. Morin was much esteemed but also the subject of many controversies.

#### Endnotes by Nick Kollerstrom

1. James Reston, *Galileo: a Life*, 1994, p. 66.
2. The Moon was at last quarter in New Style; possibly alludes to sunset or night: one would see this supernova only for an hour to two after sunset because of its location (comment from P.K.).
3. The period in which Mars meets together with Jupiter and Saturn as they all did in 1604 was computed by Kepler in his *De Stella Nova* of 1606 to be nine centuries; not quite the same as the period in which the pattern of Jupiter-Saturn conjunctions (the 'chronocrators') revolve once around the zodiac, which was eight centuries. See: Abraham Sachs and Christopher Walker, 'Kepler's View of the Star of Bethlehem and the Babylonian Almanac for 7/6 B.C.,' *Iraq* 1984, 46, pp. 43-55. The matter was considered important because of Tycho Brahe's prophecy of some new era or new beginning to the cycles of time, owing to the 'chronocrators' moving into the fiery triplicity in 1604.
4. A new star (nova) appeared in 1601 in the constellation of Cygnus shortly before the much brighter one (supernova) of 1604; for the new 3rd-magnitude star of 1601 see Barry Hetherington, *A Chronicle of Pre-Telescopic Astronomy*, Wiley, 1996.
5. The new star reported by Tycho Brahe in 1572 was a brilliant supernova in Cassiopeia.
6. Their Mercury positions could well err by ten degrees; see Owen Gingerich, *The Eye of Heaven*, 1993, New York, pp. 209, 233.

7. Galileo was more being asked to find a birth date rather than give an interpretation. As regards the closing affirmation in this letter concerning divine providence, one notes that the death of Grand Duke Ferdinando in 1609 (before he reached his climacteric year) was of crucial significance for Galileo's own career, because it resulted in Cosimo II de Medici becoming Duke of Florence.

8. These two letters indicate who came to listen to Galileo's mathematics lectures, viz. Philosophers and medics. The second letter also contains an affirmation by Galileo concerning how important it was for the practice of medicine, to understand the 'mathematics' which he taught, viz. how to erect a horoscope for the onset of illness.

9. cf. The Foreword of William Harvey's *De Motu Cordis*: 'The animal's heart is the basis of its life, its chief member, the sun of its microcosm' (1628); Garin, p. 11.

10. For discussion of this letter, with its Neo-Platonic tenor, see Eugenio Garin, *Astrology in the Renaissance*, London: Routledge 1982, p. 11, as showing 'the translation into astrological language of the 'strengthening' of rays according to where they meet, and of their intersection, fragmentation and augmentation... ; Latin from Dionysius the Areopagite *The Divine Names*, trans. C E Rolt, ed. by Peter Nockolds.

11. After arriving in Rome in April, Galileo had dined with the Abbot Orazio Morandi, without realising that the latter had just gone public with a papal death-prediction, based on the upcoming solar eclipse of June 10<sup>th</sup>. In May the Jesuit newsheet announced that Galileo 'the famous mathematician and astrologer' had arrived, and accused *him* of having made a papal death-prediction. At this time, the Pope was, together with Campanella, rehearsing the magical rituals that would protect him from the malignity of this forthcoming eclipse. After the eclipse, Morandi was arrested and thrown into a Vatican dungeon – having in his possession, it transpired, a version of Galileo's natal horoscope.

12. *Kepler's conversation with Galileo's sidereal Messenger*, E. Rosen, 1965, New York, pp. 48-9. In Kepler's *Tertium Interveniens* of 1610 he stated: 'Visual and manifest experience put the semi-sextile in my hands'. Earlier works of his had dismissed it, because it gave no musical ratio.