1604–2004: SUPERNOVAE AS COSMOLOGICAL LIGHTHOUSES
ASP Conference Series, Vol. 342, 2005
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The Discussion between Kepler and Roeslin on the *Nova* of 1604

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Abstract.
At the beginning of the XVII century, Kepler and Roeslin were much closer in stature than history commonly teaches us today. The appearance of the *nova* in 1604, precisely at the moment and in the place of the great conjunction marking the emergence of the fiery trigon, was held by Roeslin to confirm his previous prognostication of a "universal transformation" of the world. This extraordinary event gave occasion to "reports" written in German in 1604 by our two authors with such different methodological and theoretical outlooks. Beginning in 1606 with the publication of Kepler's *De stella nova* and lasting until Roeslin's death in 1616, a discussion arose between the two involving several of their works. We will focus on the antecedents and first phase of the discussion (1604–1606), giving particular attention to the problem of the "signification" of the *nova* in the context of contemporary eschatological expectations.

1. Introduction

For many years before 1600 astronomers, astrologers and learned individuals in general throughout Europe directed their attention towards the great conjunction of Jupiter and Saturn in Sagittarius that was anticipated to take place in 1603. This conjunction would mark the beginning of the new *fiery trigon* that would last for the next 200 years.[1] It would *perfect* itself in September/October 1604, when Mars would join the other two superior planets still situated in the sign of Sagittarius. The widespread expectation is reflected in the *Bericht*, or report commissioned by Emperor Rudolf II, which Johannes Kepler (1571-1630) wrote in 1603.[2] For his part, Helisaeus Roeslin (1545-1616) had published in 1597 a book entitled *Tractatus meteorastrologiphysicus* (Roeslin 1597), in which he announced that a radical, positive transformation in human, political and religious affairs was to be expected from 1604 onwards; "allgemein *Catastrophe*" was the term he used time and again.[3] So Roeslin's voice joined those of a large

[1]See Ernst (1986). For the special attention to the phenomenon in Germany see (Barnes 1988, p. 171ff).

[2]Kepler, Ausführlicher Bericht Vom jetz angehenden feürigen Triangul und seiner Bedeüttung, in Kepler Gesammelte Werke (1937, hereafter KGW 1937, vol. XI 2, p. 67). Fundamental sections of this report, which remained unpublished, were incorporated in a Latin translation into the later treatise *De stella nova in pede Serpentarii* (Kepler 1606, chap. II-VII).

[3]"... biss sie jhr endschafft erraichen / oder ein Catastrophen und aussschlag der Sachen bekommen / erst umb ermelte Zeit/ Wann nemlich der fewrig trigonus vollkommen angehn wirt. Dann

contingent that announced great changes from 1603-1604, in consonance with the new phase in the history of the world (Ernst 1986).

So today we can understand the astonishment of the astronomers and astrologers who were awaiting the culmination of the great conjunction in Sagittarius with the incorporation of Mars, only to discover suddenly and unexpectedly at the beginning of October 1604 that a new star had appeared, of the first magnitude, in the constellation of Serpentarius, at the level of the left foot, slightly above the site of the conjunction of Mars with Jupiter and Saturn.

2. Works of Roeslin and Kepler Pertaining to the Discussion on the Nova

Roeslin noted the appearance of the star on 2 October (old calendar), after sunset. He immediately wrote a hurried report, dated 4 October, describing his first impressions to an unidentified nobleman. For his part, Kepler was notified of the appearance of the *nova* on the morning of 1 October by its presumed observer, though he did not believe the discovery. After several cloudy days, however, he was finally able to observe the *nova* on 7 October, magnificent and bright in the sky. Roeslin did not write anything else on the nova, but his short report must have been read by a certain number of people since it reached the Emperor and Kepler, in Prague. Kepler informed Maestlin, in a letter dated 14 December (KGW 1937, XV, letter n. 305, p. 72), and the unknown nobleman who had forwarded it to the Emperor. In his reply of 15 December to this unknown nobleman, Kepler informed him that he had written his own report (*Bedenckhen*) "six weeks ago" and that he would send him a printed copy (KGW 1937, XV, letter n. 306, p. 74). Kepler's report was entitled *Gründtlicher Bericht von einem ungewohnlichen newen Stern* and had been printed in Prague in November (KGW 1937, I, p. 473).[4] New editions were printed in 1604 and 1605, without Kepler's knowledge.

In 1605, Roeslin's brief report *Iudicium, oder Bedencken Vom Newen Stern, welchen den zweiten Octobris erschinen und zum erstenmal gesehen worden*[5] was printed in Strasbourg, again without the author's knowledge. And also in 1605 both reports were published in a joint edition, unbeknownst to Kepler, and possibly also to Roeslin, in Amberg (Caspar 1968, n. 24). In 1606 Kepler published his great treatise *De stella nova in pede Serpentarii*.[6] In this long work, written in Latin and aimed at the European intellectual community (unlike the *Bericht*, written in German, from which nonetheless it reproduced several important ex-

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was Anno 1584. zu anfang des Zeichens des Widers davon der Comet ausgangen / geschehen / mit der zusammenkunfft der Planeten / ist noch nit vollkommen geschehen und in Saturno und Iove noch nicht angangen: Sondern allein erfüllt in anderen Planeten mit Saturno und Iupiter." (Roeslin 1597, p. 14r, 20v, 22r) For further references on Roeslin see Roeslin (2000, p. VII).

[4]For a list of the different editions see Caspar (1968).

[5]Roeslin (1605). Cf. Roeslin, Discurs, chap. 6, sig. [G iv] r: "solcher Brieff ist wider mein wissen und willen hernach gedruckt worden."

[6]See also Caspar (1968, n. 27) and above note 2.

tracts), Kepler carried out a task in many aspects similar to that of Brahe in his *Astronomiae Instauratae Progymnasmata* (published posthumously in 1602, under the supervision of Kepler himself) for the *nova* of 1572 in Cassiopeia (Brahe 1602). In *De stella nova* Kepler occasionally challenges Roeslin's position, especially in the chapters devoted to the significance of the *nova*, presenting in detail the reasons for his dissension and criticism that he had formulated in 1604 in the letter to the "unknown nobleman" mentioned above.

This was the beginning of an open controversy which was to last a number of years. Roeslin felt unjustly attacked and criticized, and so took advantage of the circumstance of the comet of 1607, on which Kepler wrote a treatise in German[7] which Roeslin was unable to obtain despite his efforts, to write and publish the *Discurs* of 1609 (Roeslin 1609, Appendix, sig. N iii, r). In this work, in an examination of the course and significance of the comet of 1607, Roeslin completed his general theory of nature and at the same time defended his *Iudicium* on the *nova* and his prediction of the "universal catastrophe" in the fiery trigon. While openly acknowledging Kepler's excellence and superiority at the purely mathematical level of astronomical calculation, Roeslin responded angrily to Kepler's rebuke and claimed superiority in matters of astrology, chronology and natural philosophy. So on a general level Roeslin defended astrology from Kepler's attack, and on a personal level his own prediction of the universal *catastrophe* as a forecast which was beginning to materialise. He also underlined the physical incongruities on which Kepler's work was based, in particular his incomplete and contradictory theory of the elements and above all his Copernicanism.

Kepler replied in the same year of 1609 with his *Antwort auf Röslini Discurs*,[8] which led in turn to a new response from Roeslin in his *Mitternächtige Schiffarth* (Roeslin 1611). By this time the problem had taken on a new significance due to the publication of Galileo's telescopic discoveries in March 1610 and Kepler's support for the Italian astronomer's findings in his *Dissertatio cum Nuncio Sidereo* two months later.

If we also bear in mind that in *De stella nova* Kepler published a final section entitled *De Iesu Christi Servatoris nostri vero anno natalitio, consideratio novissima* (KGW 1937, I, p. 357), in which he presented and accepted the thesis of the Pole Laurentius Suslyga that Christ had been born four years before the normally accepted date, we see that here the Imperial Mathematician was entering the territory that Roeslin considered to be his prerogative, and furthermore supporting a thesis to which Roeslin did not subscribe. Kepler had opened up a whole new area for disagreement, linked to the question of the *nova*, since it was no coincidence that he had introduced the matter of the birth of Christ in *De stella nova*. If Christ had been born four years before the traditionally accepted date, then it was even closer (precisely, two years later) to the date of the great conjunction which initiated the fiery trigon (KGW 1937, I, p. 278). Roeslin

[7] Johannes Kepler, 1608, Aussführlicher Bericht von dem [...] 1607 erschienenen Haarstern oder Cometen, und seinen Bedeutungen (Halle: Erasmus Hynitzsch), in KGW (1937, IV, p. 57); see Caspar (1968, n. 29, p. 44s).

[8] Johannes Kepler, 1609, Antwort auf Röslini Discurs Von heutiger zeitbeschaffenheit und wie es ins künfftig ergehen werde (Prague: Pauln Sesse), in KGW (1937, IV, p. 101); see Caspar (1968, n. 32, p. 48ff).

limited himself to opposing this theory in both the *Discurs* and *Mitternächtige Schiffarth*, and then went on to publish a systematic, exhaustive response in his *Prodromus dissertationum chronologicarum* of 1612 (Roeslin 1612), in which he claimed that Christ was in fact born only a year and one-quarter before the traditionally accepted date. Kepler's reply was not slow in coming: in the following year, also in Strasbourg, he published his *Bericht vom Geburtsjahr Christi*.[9]

It is clear that we cannot fully account for this argument between the two authors on the subject of the *nova* of 1604 in this paper. Here, we will limit ourselves to presenting a brief comparison of their writings in German in 1604 together with some observations on Kepler's *De stella nova* of 1606.

3. Roeslin: Iudicium, oder Bedencken (1604)

Roeslin observed the *nova* on the night of Tuesday 2 October 1604 (old calendar). For several days he had been observing the sky and the constellation of Sagittarius, looking out for the arrival of Mars at the great conjunction joining Jupiter and Saturn. In his *Iudicium, oder Bedencken* he states that on the previous Thursday and Friday (27 and 28 September) the star had not yet appeared, while for the three days in between (29, 30 September and 1 October) bad weather had made observation impossible. It was on Tuesday 2 October that, riding through the night under a clear sky, he looked for the site of the great conjunction and his eyes fell upon the marvellous spectacle of the *nova*: "When night had fallen and I sought the great conjunction of the planets Saturn, Jupiter and Mars, I saw immediately three great stars and Saturn, in fourth place, slightly ahead of the other three towards the West. Among the three I recognised Jupiter and Mars straight away; as for the third, which was over Jupiter (at the same distance to the north of Jupiter as Mars was to the south), I immediately realised that it was a new star, almost as large as Jupiter, but brighter, and as it sparkles and titillates, like a *fixed star*, though in that place there is none. It must therefore be a new star."[10]

As Kepler noted in *De stella nova*, Roeslin was one of the first to observe the *nova*. On the same day Magini saw it in Bologna, David Fabricius saw it the following day, Maestlin on the 6^{th} and Kepler on the 7^{th}. Kepler was beaten to it only by the imperial functionary in charge of meteorological observation

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[9] Johannes Kepler, 1613, Bericht vom Geburtsjahr Christi (Strasbourg: C. Kieffer, in Verlegung P. Ledertz); see Caspar (1968, n. 43, p. 55f). In 1614 the Latin version appeared with a number of additions: Johannes Kepler, 1614, De vero anno, quo aeternus Dei Filius humanam naturam in utero benedictae Virginis Mariae assumpsit (Frankfurt: J. Bringer); cf. Caspar (1968, n. 44, p. 56). Both texts are compiled in KGW (1937, V).

[10] "Als die Nacht angangen / und ich mich nach der grossen Coniunction der Planeten / Saturni / Iovis und Martis umbgesehen: hab Ich drey grosse Stern alsbald ersehen / und Saturnum den vierten weitter davon den dreyen vorgehen gegen Occident: auch also bald under den dreyen Iovem und Martem erkandt: den dritten / der ob dem Iove gestanden / so weit von jhm gegen Mitternacht / als Mars gegen Mittag gestanden / hab ich alsbald für ein Newen Stern erkandt / der schier so gross als Iupiter / doch etwas fewriger / und weil Er gezwitzert unnd scintillirt, als ein stella fixa, aber keiner an dessen Statt sonst steht: so muss solcher ein newer Stern sein" (Roeslin 1605, sig. Aij r-v); all the translations are our own. See also sig. Aiii r for the reference to the previous days. It is perhaps the first written report on the *nova* in Occident.

in Prague, Johann Brunowsky, who claimed to have observed it on the night of 30 September to 1 October (KGW 1937, I, p. 158ff). Roeslin wrote his report "hustily" (in Eyl) on the 4^{th} (Roeslin 1605, sig. B r), only two days later, in the form of a short dispatch - in the *Discurs* of 1609 he described it as a "letter" (Brieff)[11] - to an unknown individual with the request that he transmit it to Isaak Malleolus, a Strasbourg mathematician and astronomer.[12] Evidently, it is not a technical report on the nature of a new phenomenon; a report of this kind would have required a certain time of observation and study to establish at least its initial evolution. It is more a warning of a disturbing and highly significant phenomenon. Roeslin is struck first by the astrological implications, that is, the historical-eschatological implications, and only subsequently by its cosmological consequences.

On the first question, Roeslin starts by noting the connection or analogy with the *nova* of 1572 in Cassiopeia, which coincided in terms of longitude with Jupiter, though its latitude was much further north, and also appeared in a fiery sign (Aries) (Roeslin 1605, sig. Aii r and A iiij r). Further, the disposition of the new star with the planets is "proportional" in longitude and latitude, forming a "straight line": Mars appears at 22° of Sagittarius with a latitude of 1° south, Jupiter at 20° with a latitude of half a degree north, and the star at 18° with a latitude of 2° north (Roeslin 1605, sig. Aij v and Aiij r). But what is significant and "marvellous" (wunderlich) is 1) that it is a "new star" (newer Stern); 2) that it does not appear to be a comet, but a fixed star (a *nova*), due to its brightness and titillation, as he is inclined to think, though this is a point that requires confirmation (to this end he enlists the aid of Malleolus) via the demonstration that it lacks movement of its own;[13] 3) that it appears at the precise moment of the great conjunction of the superior planets in Sagittarius and on the same great conjunction, when the fiery trigon begins, "which concerns both spiritual and worldly government" (Roeslin 1605, Postscriptum, sig. B v).

This is not all. The most marvellous thing, in addition to the many points of correspondence mentioned above with the *nova* of Cassiopeia, whose meaning and effects have not yet materialised,[14] is that this celestial configuration is suggested by the course of the comet of 1580. This is particularly exciting to Roeslin because he sees in this the confirmation of the prediction he presented in his *Tractatus* of 1597 on that comet:
"And I beg you to read what I wrote in my Treatise *Methroastrologiphysico* [sic] on the comets of 1580 and 1595; you will see that the comet of 1580 has

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[11] Cf. previous note n. 5.

[12] "Zeigen [Amberg's later edition has 'zeiget'] diss mein Schreiben Herrn Malleolo" (Roeslin 1605, sig. Aiiij v). Isaak Malleolus is the author of several annual Vorhersagen ('Predictions') published in Strasbourg in the course of those years. See Zinner (1964).

[13] "Zeigen diss mein Schreiben Herrn Malleolo, dass Er auch observir / ob diser Stern einen Lauff an sich nemmen werde / wie die Cometen / oder still stehn werde / wie stella fixa. Ich halte dass er fixae instar sein werde / wie der de Anno 1572. halte auch dass er in summo aethere sey wie jener / und dass er ein lange Zeit stehn werde." (Roeslin 1605, sig. Aiiij v).

[14] "Ich habe niemalen gehalten / dass der Stern de Anno 1572. seine Würckung vor 30. Jaren erzeygen werde. Ist auch in der gantzen Welt noch nichts geschehen / quod magnitudini huius signi respondeat" (Roeslin 1605, sig. Aiij r).

pointed to this star, since it disappeared at exactly the point where the star has now appeared and where the great planetary conjunction has taken place" (Roeslin 1605, sig. Aiij v).

What Roeslin could not have suspected in 1597 is that the predicted great conjunction and the beginning of the fiery trigon would coincide with the "miracle" (Wunder) of the present star. But he takes this as confirming that "God inclines to execute [...] in these last times of the world"[15] what he forecast in the *Tractatus*: the great transformation or *Catastrophe* of human affairs for the better, illustrations of which were the unification of Scotland and England and the near-independence of the Netherlands: "And as I have written that in this time a *Catastrophe* will arise on account of all the things that have occurred in Christendom over many years; this is now coming to be in England and in the Netherlands; and the other things will also soon be shown" (Roeslin 1605, sig. Aiij r). The star that has just appeared shows that "the moment has come in which these miracles are to occur".[16] Nonetheless, Roeslin makes it clear that although signs of the coming of the *catastrophe* will be visible, the great event will take some time, as corresponds to transformations of such a large scale.[17]

The question of the cosmological consequences of the *nova*, on the other hand, is dealt with swiftly. The investigations of Malleolus and the "great astronomers" Maestlin and Kepler were to deliver the *coup de grâce* to Aristotle's theory of comets (here Roeslin is referring to the theory of the heavens in general), albeit retaining the parts of Aristotle's system that they considered to be correct and worthy of preservation. This would mark the end of the "slavish submission to the doctrine of a single person" (Roeslin 1605, sig. Aiiij v - B r).

4. Kepler: Gründtlicher Bericht (November 1604)

Kepler wrote his *Bericht* in November, having made further observations that allowed him to draw firmer conclusions on the cosmological scale as regards the location, movement (or lack thereof) and the nature of the new star. In this way the imperial astronomer, who provided a more exact position for the *nova* than Roeslin ($17°43'$ of Scorpio and $1°55'$ of northern latitude), was able to use the observations of 17, 18, 21 and 28 October (new calendar)[18] to establish that "the star had no motion apart from diurnal rising and setting. [...] this new star [...] belongs to the outermost sphere of the heavens" and is therefore a *star*.[19] Kepler also introduces a reference to Copernican cosmology (to the vast

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[15] "Gott in das Werck richten [...] in disen letzten Zeiten der Welt" (Roeslin 1605, sig. Aiiij v).

[16] "Aber diser jetziger Stern zeygt an / dass *jetzund die Zeit da ist* / darinn dise Wunder geschehen sollen" (Roeslin 1605, sig. Aiiij r); the italics are added to highlight the use of a markedly eschatological expression.

[17] "Unnd wird es die Erfahrung künfftig bald geben, aber die würckung sich lang erstrecken. Wie dann grosse Verenderungen vil Jar erfordern", these are the very last words of the Postscriptum.

[18] Observations that appear in *De stella nova*, chap. XII.

[19] Johannes Kepler, Gründtlicher Bericht von einem ungewöhnlichen newen Stern [thereafter *Bericht*, cited by the edition Prague 1604, p. 395 (Caspar 1968, n. 19; KGW 1937, I, p. 394)]; our translation follows the version in Field & Postl (1977).

empty space between Saturn and the fixed stars) to infer a physical conclusion: the *nova* could not have been born as a natural effect of the great planetary conjunction (*Bericht*, p. 396).[20]

This is the reason for the initial comparison with the *nova* of Cassiopeia, universally known, and with this other one that had shone without interruption in the constellation of Cygnus since 1600, but whose magnitude of the third rank and position meant that it was relatively unknown.[21] Kepler states that the *nova* of Serpentarius is in fact much more important than that of Cassiopeia.[22] According to eye witnesses of both, the *nova* of 1604 was "much larger and clearer"; in addition, Kepler says, the *nova* of 1572 was in a remote constellation and in a region of the sky that was not particularly relevant, while the *nova* of 1604 is next to the zodiac, that is, in the path of all the planets and appears in the decisive place and moment, in the fiery sign of Sagittarius and at the time of the great planetary conjunction that marked the start of a new fiery trigon after 800 years:

"Our star, however, is in the sign of the Archer, one of the fire signs, and the one in which the long-heralded Fiery Trigon began last December, an event which occurs only once every 800 years. The star of 1572 came at no special time, and without any particular indication, coming into the world without warning, as when an enemy overruns a city by night and is in the marketplace before the citizens even know he has come. Our star has come in the very year about which Astrologers have written so much, because the Fiery Trigon begins in it, and in the very month when Mars is drawing close to the two highest planets, thus completing the Great Conjunction described by Cyprianus [Leovitius],[23] it has come on the very day when Mars is closest to Jupiter and exactly at the position of this conjunction".[24]

In addition, the *nova* appeared at the time and place that all the men of science were watching; indeed, these men of science were the ones who observed it before the common people were able to see it, because of its southerly position and its reduced visibility due to the sun's light.[25]

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[20] Cf. *De stella nova* (KGW 1937, I, p. 282).

[21] In fact Roeslin does not appear to know it at this point. Cf. Roeslin, *Discurs*, chap. II, sig. B v, where he attributes the news to "a long treatise by Kepler", which must be the *De stella nova* of 1606, which included the treatise *De stella tertii honoris in Cygno [...] Narratio Astronomica* (KGW 1937, I, p. 293).

[22] *Bericht*, p. 394; english translation p. 333.

[23] Kepler means Cyprianus Leovitius 1564, De coniunctionibus magnis insignioribus superiorum planetarum (Laugingae ad Danubium: E. Seltzer), which reached a very wide audience.

[24] *Bericht* p. 395, english translation from (Field & Postl 1977, p. 335). Kepler dated the conjunction of Mars and Jupiter precisely on the day of the appearance of the nova: 9 October (new calendar). *De stella nova* repeats this in a literal translation of the German passage we have cited: "... in eum precise diem, quo die Mars post Saturnum prius superatum, etiam Jovem erat assecutus", chap. XXV, p. 272. However, chapter XI, which gives the accurate results of the calculation, gives the date 27 September as the day of the conjunction; ibid., p. 207.

[25] *Bericht*, p. 395. This passage would also be translated literally in *De stella nova*, (KGW 1937, I, p. 272).

We could say that Kepler, unlike Roeslin, belittles the significance of the star of Cassiopeia to highlight the importance of the *nova* of 1604; the Alsace physician stresses the *nova* of Cassiopeia as a forerunner of the later star so as to attribute more importance to the star of Serpentarius. In addition, from that moment Kepler's *Bericht* concentrates on the question of the "significance" (bedeuttung), we may suppose that all previous description of its importance and its exceptional nature (the star is called "diss wunderwerck Gottes") is intended in anticipation of this very matter.

However, compared with the confidence and vigor with which Roeslin pronounces himself on this point, Kepler adopts, as had Brahe in his *Progymnasmata*, a cautious and prudent attitude. As the Danish astronomer had done, Kepler postpones the task until a later work (*De stella nova*) and presents his considerations on the significance as a "small preparation".[26] To begin with, he acknowledges the difficulty of the problem: "The star's significance is a difficult matter to establish and we can be sure of only one thing: that either the star signifies nothing at all for Mankind or it signifies something of such exalted importance that it is beyond the grasp and understanding of any man" (*Bericht*, p. 396). So it is all or nothing: either a skeptical and Epicurean negation of astrology in general and of the significance and physical effectiveness of the *nova*, or an acceptance of its full effectiveness and significance. The first alternative was presented and discussed extensively in *De stella nova* (KGW 1937, I, chap. XXVI, p. 276f; chap. XXVII, p. 283-287). Here it appears thoroughly described in his general interpretation of the phenomenon (the appearance of the *nova*, which in itself would be a simple natural event, at the moment and place of the great conjunction) as the product of "blind chance". Kepler simply rejects this: "On the other hand, I cannot go along with those who completely rule out any connection between the star and the conjunction, maintaining that it was blind chance that ordained that this new star should coincide exactly, to the year, month, day and position, with the date and position of the Great Conjunction" (*Bericht*, p. 397).[27]

So all this seems to indicate that Kepler adopts the second alternative, close to Roeslin's position. He says, in effect: "So, as I said, I am not willing to ascribe this wonderful coincidence in time and place to blind chance, especially since the appearance of a new star, on its own, even without regard to time and place, is no ordinary thing, like throwing dice, but a great wonder, whose like has not been heard of or written about before our own time" (*Bericht*, p. 397).

However, the recognition of an intentional or premeditated coincidence seems to imply, here again Kepler is close to Roeslin, the introduction of a supernatural agent (God), the interpretation of the event as "miracle", something that Kepler seems to have accepted tacitly by describing the star as a "wunderwerck Gottes", and the assignment of a precise objective, that is, to warn humanity of portentous future events: "I should not wish to deny that this star is connected with the conjunction of Jupiter and Mars to the extent, perhaps, one must acknowledge,

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[26]"Damit ich aber doch auch ein kleine vorbereittung mache / die bedeutung mit der zeit zuerkundigen" (*Bericht*, p. 397).

[27]Kepler goes on to illustrate the improbability of a random coincidence using the analogy of rolling dice, which he presents in *De stella nova* (KGW 1937, I, p. 276 ff and 284 ff).

that God himself [...][28] intended to indicate something significant for the human race and therefore marked the time and place of this conjunction of Jupiter and Mars to be remembered for ever, and so willed the disposition of things in ineffably higher places that when we men looked up from our Earth we should see a very bright star in that position" (*Bericht*, p. 396).

But here emerges the difference vis-à-vis Roeslin. Where Roeslin enthusiastically and unreservedly supports the path of divine causality and the providential and even eschatological finality, predicting "universal *catastrophe*", Kepler in contrast recognises that this is a *possibility* and that it involves accepting far-reaching presuppositions (assumpta). Possibility must not be confused with reality: "But who can be unaware that for me and those like me these assumptions seem too lofty, and cannot permit us to conclude that what may be so truly is so?" (*Bericht*, p. 397).

On this point Kepler suspends judgment and postpones the study, as we noted, to a later date, since the phenomenon should be considered from a purely natural or physical perspective. As a consequence, Kepler claims, the standard criteria of astrology should be applied. Thus, Kepler concludes his *Bericht* by playing down the possible effects of the star ("I believe it is in accordance with Nature that the star, as long as it remains, will resemble the planets in its influence", *Bericht* p. 397), amid a series of ironic observations that the star would doubtless produce a flood of new publications (today we would speak of its impact in the media, *Bericht* p. 398),[29] that there would emerge prophets and other charlatans who are "encouraged by the appearance of this star to undertake some new exploit, as if the Lord God had lit this star in the darkness to light them"(*Bericht*, p. 398).[30] Finally, Kepler cleverly speculated on the possibility of effecting great transformations in the human world on the basis of the unfounded conviction that the heavens determine actions undertaken.[31]

5. Kepler: Letter to an Unknown Nobleman (December 1604)

Kepler was able to read the manuscript of Roeslin's *Iudicium*, as we noted above, in December 1604, via the copy sent by a nobleman to the Emperor. The Imperial Mathematician responded in a letter dated 15 December, thanking him for the missive; his position obliged him to gather as much material as possible on the *nova*, and he now voiced an opinion on Roeslin's prediction for the first time. This opinion was, broadly speaking, the same as the one that he would later publish in *De stella nova* in 1606 and which would irritate Roeslin so much. Kepler does two things in the letter: first, he takes up a general philosophical position against Roeslin's procedures; second, he offers certain reflections on astrological prediction, and its premises.

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[28] We omit an interesting parenthesis on God's providential care for mankind, which will be translated into Latin in the conclusion of the first part of *De stella nova* (KGW 1937, I, p. 291).

[29] Kepler will develop this in *De stella nova* (KGW 1937, I, p. 320).

[30] We have slightly modified the translation.

[31] This appears to be indicated by the final anecdote referring to events in Bohemia in 1284.

We do not know the extent to which he is merely echoing the views of his correspondent regarding the first point, because the original missive is lost. Kepler states that "Roeslin's philosophical foundations lack solidity".[32] Nonetheless, he claims to consider the phenomenon only from the perspectives of Astronomy and Philosophy, that is, via the natural capacity for judgment, and accepts the possibility (possibly suggested by his correspondent) that Roeslin may have benefited from assistance at a higher level, and would therefore be an inspired prophet:

"Thus, I do not deny that his mouth and pen are governed from another instance and that he is to a certain extent a prophet. I accept that our Lord God produces new stars in the firmament against nature and also turns the interpreters of the stars against philosophy. [...] As God has not granted me other masters and guides than my eyes, ears, books, reason and the naturally infallible philosophy; I will gladly leave to Roeslin and to others the art of the future and believe that they say many things due to divine inspiration" (KGW 1937, XV, p. 74).

At this point Kepler seems to combine an ironical tone and the prudence of one who knows that God often uses "signs" to communicate with men, and that therefore the *nova* might be something more than a natural phenomenon and may surpass the natural capacity of human judgment. This combination will re-appear, and even be expanded upon, in *De stella nova*.

On the second point Kepler goes back to Roeslin's *Tractatus* of 1597 and the connection established there between the comets of 1556 and 1580, and Roeslin's conclusion there that the comet of 1580 referred men to the beginning of the fiery trigon, to 1604, and to the "general *catastrophe*" that was to begin in that year. Here Kepler presents a range of objections: 1) Before 1556, there had been other comets; he appears to say that Roeslin's premises are so vague and arbitrary that nothing can be concluded from them (KGW 1937, XV, p. 75). 2) Kepler challenges Roeslin's interpretation of the course of the comet of 1580, recalling the authority of Maestlin, who in his treatise on that comet had always attributed to it a retrograde course (Maestlin 1581, sig. E2v); so Kepler was unconvinced by the idea of a final change in the comet to a direct course and concludes that "Its entire course has therefore been retrograde and has never been inverted; therefore Roeslin cannot with the same reasoning as before prophesy a *catastrophe* and *conversions*" (KGW 1937, XV, n. 306, lines 42–44). 3) The change in direction, furthermore, could be interpreted as an apparent retrogradation due to the annual movement of the Earth (KGW 1937, XV, n. 306, lines 47f).

The rest of the observations do not refer directly to Roeslin. Rather, they are reflections of Kepler's which conflict to a greater or lesser extent with Roeslin's general position. Kepler confesses that "we seek too much art in these things" (KGW 1937, XV, n. 306, line 50) and repeats his more open position: either they signify nothing, in which case "we are foolish to concern ourselves with them" (KGW 1937, XV, n. 306, lines 53f) or they do have a meaning, and this meaning must be within the grasp of the common man. In the same way, a

[32]"seine *fundamenta* in der *Philosophia* nit uberal den Stich halten" (KGW 1937, XV, letter n. 306, p. 74).

distinction must be made between the question of "natural efficacy" (natürliche wirckhung) and "significance" (bedeüttung). While the former may not be very large, the latter may announce, in accordance with the "natural light", "a long and painful misfortune", by analogy with the comets (KGW 1937, XV, p. 76).[33] As we can see, Kepler presents a position, as he does, incidentally, in the *Bericht*, that is more open, less definite, less confident than Roeslin's. The position he presents in 1606 in *De stella nova* will be similar.

6. Kepler: *De Stella Nova* (1606)

De stella nova is a vast work, to which we cannot do justice here; the wealth of themes it deals with and the complexity of their analysis go far beyond the scope of this paper.[34] Moreover, Kepler makes hardly any explicit mention of Roeslin, apart from a few references in the first part of the work, particularly in the first chapter, on the subject of the first observers of the *nova*. What little reference there is to the discussion with Roeslin is found in the second part, written some time after the first one (see KGW 1937, I, p. 291).

Of the three chapters in this second part, the first two are devoted to the "natural effects" of the star and the fiery trigon on the sublunary world and the third and final one (chap. XXX) to the question of the "purpose" of the new star (hence to an intentionalist, providentialist interpretation). Naturally, it is the last one in which Roeslin's interpretation and prediction are discussed. The critical tone of the letter of December 1604 is still present: reservations concerning the basis of Roeslin's interpretation, that is, the course of the comet of 1580, and its relation to the comet of 1556 and the phenomena of 1603-1604; and finally the recognition of a leap into prophecy.

In the first case, Kepler reformulates the reservations he noted in his letter. Roeslin's argumentation, which Kepler presents in the form of a syllogism, is described as "the most fantastic ever presented to me".[35] Kepler adduces several reservations that invalidate the syllogism: 1) there were other comets, before and since 1556, and so the connection established between those of 1556 and 1580 is insufficient (imbecillis); 2) Roeslin's interpretation is one possibility, but it could just as well be inferred that the *catastrophe* began in 1580 and ended in 1604; 3) for the comet of 1580 a simple linear course is proposed from Aries to the border of Libra and Scorpio, with an apparent inversion at the end due to the annual movement of the Earth.

But Kepler is convinced, and he now goes on to the second point, Roeslin's leap into prophecy, that these doubts, and above all these astronomical subtleties, are incompatible with Roeslin's prophecy: "Verum istas argutias non fert haec Mantice" (KGW 1937, I, p. 343). Between his ironic tone and the recognition of a possible higher inspiration corresponding to the very probable divine origin of

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[33] On this point, *De nova stella* presents some possible "meanings" of a markedly different tone, and in general positive.

[34] A summary of the part concerning the "natural effects" and the "meaning" of the *nova* can be found in Simon (1979, p. 52–80).

[35] "Nulla unquam argumentatio mihi adeo mira est visa" (KGW 1937, I, p. 343).

the *nova*, Kepler accepts that "while Roeslin's argumentation is not conclusive, I acknowledge nonetheless a divine touch in his predictions. One would say that they are clods of earth which contain nevertheless a small amount of gold" (KGW 1937, I, p. 344). However, Kepler stresses that Roeslin is carried away by his desires and predicts what he would like to happen; his prophecies do not seem to have been borne out by the events.

Nonetheless, Kepler agrees that in all probability the *nova* is a *signum* from God announcing great things for the future to men (since only from Earth were the positions of the stars implicated perceived as a conjunction). He even suggests several possibilities (though without committing himself to any of them) from the generalised conversion of non-believers to Christianity to the second coming of Christ and the end of the world (KGW 1937, I, p. 347ff).[36] But the Imperial Mathematician is also aware of the need for caution and patience: the *nova* probably heralds a "beautiful and lasting ending" to the tribulations of the present and the past, but "I do not predict these things - he states - about a transformation to a better state with as much confidence as Roeslin" (KGW 1937, I, p. 353). Kepler never forgets that he is a simple astronomer, that he holds a position of responsibility and that it is impossible to please all the factions of Christianity. He also knows that, whatever significance is attributed to the star, this significance is always based on a set of assumptions; if these assumptions are proven untrue, the significance attributed loses all justification.[37] For all these reasons he limits himself in the final instance to a universal exhortation to examine one's conscience and to repent, all the more so because he recognises in himself a lack of "enthusiasm" or prophetic inspiration necessary for a correct, confident reading of a sign from God.[38]

Roeslin accepted neither the criticism of his astronomical theories nor his relegation to the position of inspired prophet. His angry response sparked a public argument whose discussion and analysis we must leave for a future study.

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[36] This last hypothesis is supported by the fact that Kepler incorporates it into his work, making it possible to place Christ's first coming and the star of the Magi that announces it only two years after the great conjunction which opened the fifth fiery trigon since the beginning of the world. The parallelism with the current trigon and the *nova* strengthens the hypothesis of Christ's second coming and therefore the eschatological significance of the star (KGW 1937, I, p. 279 and 359).

[37] "Exposui omnes modos, quibus puto methodica aliqua ratione ad significatum stellae perveniri posse: quos, rogo lectores iterum atque iterum, ut ex assumptis principiis aestimet. Negatis enim quae quoque loco assumpsi, ruet et illa quae superstruxi" (KGW 1937, I, p. 354).

[38] "[...] in hoc negocio [...] in quo, experientia teste, tantum valent Enthusiasmi: Cum res tota divina sit, reique interpretatio divina" (KGW 1937, I, p. 354). See Simon (1979, p. 80): "l'analyse des opinions proposées montre qu' on ne dispose plus de règles sûres d'interprétation; quand il s'agit d'une action divine, le dévoilement du but poursuivi relève lui-même de la Providence."

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