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The Ancient Norba and the Solstices

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Abstract: Here we propose a short discussion of the literature about the Latin Norba and its urban planning. We will also show, by means of the SunCalc software, the alignment of this planning along the sunrise/sunset on solstices.

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Introduction Norba is a town that Pliny the Elder includes in his list of the extinct towns of Latium [1,2]. Its remains are situated a mile northwest of the modern town of Norma, on the Lepini Mountains. The town was built on a hilltop, standing about 460 meters above the sea level. It was situated on the border of the Volscian mountains, overlooking the Pontine Marshes, about midway between Cora (Cori) and Setia (Sezze). Member of the Latin League of 499 BC, it became a Roman colony in 492 BC [1]. The town was destroyed during the civil wars at the end of 82 BC. Today we can see its well-preserved megalithic walls in the polygonal style. They are entirely embankment walls, not standing free above the internal ground level [1]. Remains of towers and gateways exist. Within the walls, the remains of several buildings, including the foundations (podia) of two temples, one dedicated to Juno Lucina, have been examined. From the excavations that begun in 1901, it seems clear that the remains inside the walls are entirely Roman [1]. As we will see, the planning is typically an Italic one and shows an alignment along the sunrise/sunset on solstices.

History About Norba, we find information in a book by William Gell [3]. Gell tells us that "Dionysius says that Norba was a Latin colony, or rather that the inhabitants were Latin [4]. Anciently, the city was in the territory of the Volsci; it is, however, to be remembered that, in the time of Dionysius, Latium extended to the Liris. If similarity of construction, of purpose, and of circumstances, can assist in determining the epoch of the foundation of Norba, it must have been coeval with Signia" [3]. Signia (today Segni) was a town situated on a hilltop in the Lepini Mountains, overlooking the valley of Sacco River. According to ancient texts, Lucius Tarquinius Superbus, the seventh king of Rome, established there a Roman colony. The ancient architectural remains at the site include a circuit of fortification walls built using polygonal masonry, like the site of Norba [5].

Let us continue with Ref.3, about Norba. "In after times, when, for fear of the Volsci, the Roman colony at Velitrae (Velletri) was reinforced, a new one was established at Norba ... This was in the consulate of Titus Geganius and Publius Minucius, Urbe Condita 262, only sixteen years after the erection of Signia. Norba and Setia are expressly called Roman colonies; and they were accordingly attacked as such by the enemies of Rome. Having espoused the cause of Marius, Norba seems to have been almost utterly destroyed, BC 82, by AEmilius Lepidus, one of Sylla's generals, who, unable to overcome the strength of the walls by force, entered the place during the night by treachery; but the inhabitants chose rather to perish by their own hands, than to fall into the power of the conqueror. The walls are at this day not less than seven thousand feet in circuit, and the blocks of which they are constructed vary from three to ten feet in length. ... The village of Norma (the modern representative of Norba) stands on a continuation of the rocky ridge, about a mile to the south, and is approached from the marshes by a long zig-zag road. Its hill is separated from that of

Sermoneta by a broad valley running from the marshes deep into the mass of the Volscian mountains” [3].

Also Ref.6 tells that there “seems no doubt that Norba was an ancient Latin city”. As previously told, Norba is found in the list given by Dionysius of the thirty cities of the Latin League; “and again, in another passage, he expressly calls it a city of the Latin nation”. According to [6], Norba, Setia and also Cora were originally Latin, before they fell into the hands of the Volscians. “The statement that Norba received a fresh colony in BC 492, immediately after the conclusion of the league of Rome with the Latins, points to the necessity, already felt, of strengthening a position of much importance, which was well calculated, as it is expressed by Livy, to be the citadel of the surrounding country (quae arx in Pomptino esset). But it seems probable that Norba, as well as the adjoining cities of Cora and Setia, fell into the hands of the Volscians during the height of their power, and received a fresh colony on the breaking up of the latter. For it is impossible to believe that these strong fortresses had continued in the hands of the Romans and Latins throughout their wars with the Volscians so much nearer home; while, on the other hand, when their names reappear in history, it is as ordinary “*coloniae Latinae*,” and not as independent cities” [6]. In BC 327, we find the territories of Cora, Norba, and Setia ravaged by their neighbors, the Privernates. “No further mention occurs of Norba till the period of the Second Punic War, when it was one of the eighteen Latin colonies which, in BC 209, expressed their readiness to bear the continued burthens of the war, and to whose fidelity on this occasion Livy ascribes the preservation of the Roman state. It seems to have been chosen, from its strong and secluded position, as one of the places where the Carthaginian hostages were kept, and, in consequence, was involved in the servile conspiracy of the year BC 198, of which the neighboring town of Setia was the centre” [6].

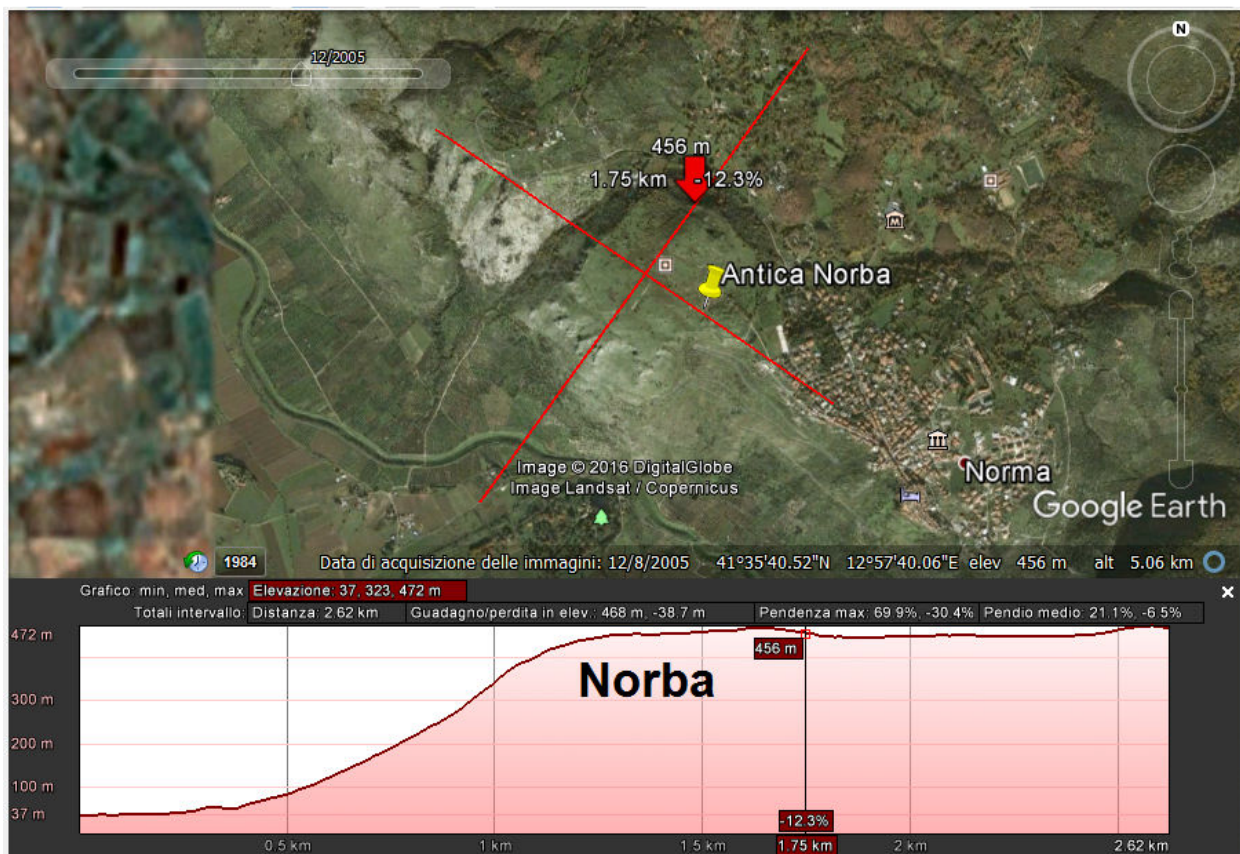


Figure 1 : Plan of Norba (Courtesy Wikipedia, Plan du site archéologique de Norba, 2013, author Cassius Ahenobarbus)



Figure 1: The main gate of Norba (Courtesy Wikipedia: Hauptzugang zu den Ruinen von Norba, Mauer mit Zyklopensteinen, author Kroelleboelle).

In the Figure 1, we can see the plan of Norba, and, in the following picture (Figure 2), the main gate in the polygonal walls. In the Figure 3, we can see two elevation profiles of Norba.



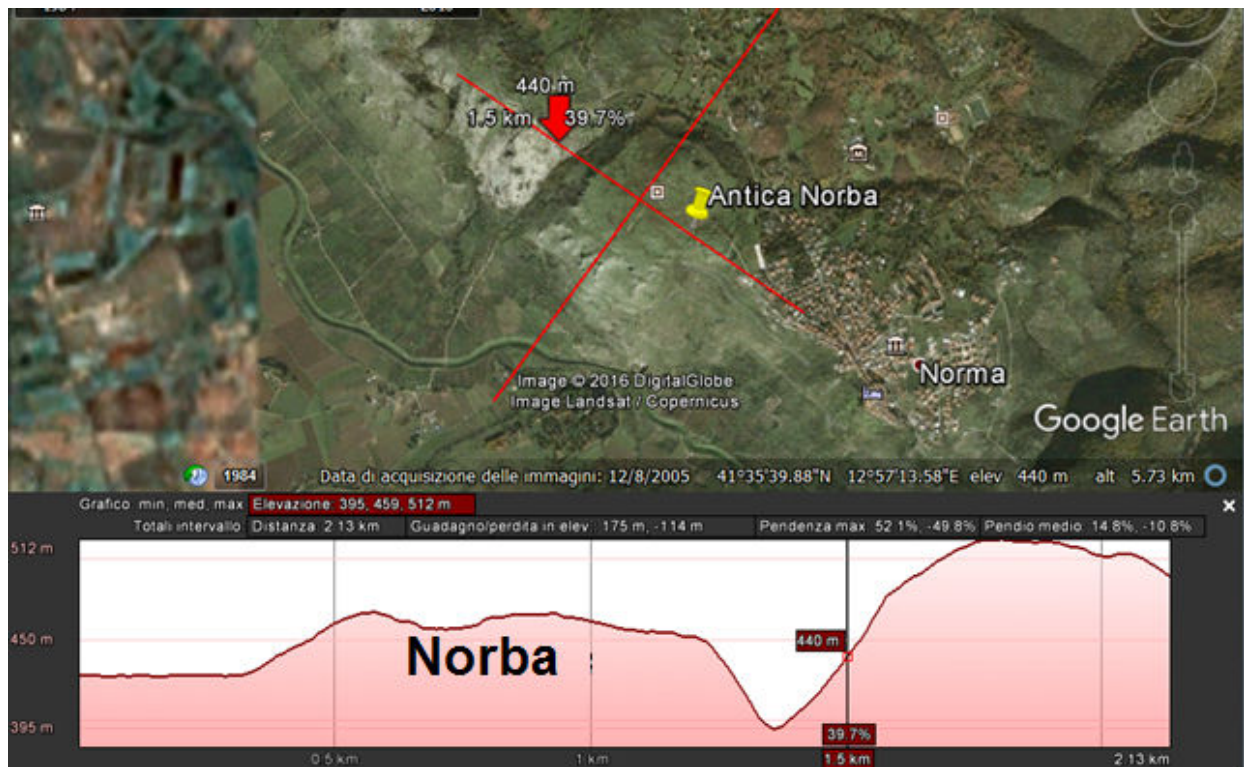


Figure 3: Elevation profiles from Google Earth.

Archeological studies About the archaeological studies of Norba, we find more information in [7]. The first excavations of the site were inaugurated in 1901, under the direction of Luigi Pigorini, by the archaeologists Luigi Savignoni and Raniero Mengarelli [8]. The results showed that all the excavated material, the remains and the objects found there were of the fourth century BC, then in full Roman age. Only in the excavations of the two temples, the archaeologists found some more archaic materials (fifth century BC). This result was a tangible contribution to debate on Norba, that saw the archaeologist Petit-Radel considering the megalithic walls of a Pelasgian origin (tenth century BC), while Gerhard proposed a more recent origin, attributable to the Rome of the Tarquinii Kings [9]. Stefania Quilici Gigli, who is supervising the excavation of Norba, is providing a careful and detailed study of the history of Norba. Since the end of the ninth century BC, the area about the town of Norba experienced a growth of population, as shown by the necropolis of Caracupa, by some tombs near the Abbey of Valvisciolo and by the megalithic walls on Mount Carbolino. It is not sure if this population also built a first core of Norba. The town, as we see it today, is dating back to IV-III century BC, when Norba was a Roman colony [7,10-16]. For the walls of Norba built by means of megalithic limestone blocks, Giuseppe Lugli considered them of the third-fourth polygonal masonry style, dated to the fourth century [7,17]. Lugli defined "polygonal" the technique of building the megalithic constructions, and proposed a classification based on four styles [18-20]. The polygonal masonry works created by simply superimposing raw or hewn stone blocks, fitted together with minimal clearance and without the use of mortar, are of the first and second style. The second style differs from the first style for the insertion of wedges or small stones between in the gaps and, in some cases, for a first attempt of finishing the external surfaces. The real breakthrough is achieved by the third polygonal style. In it, the blocks have perfect geometric shapes. The outer surfaces of the fortifications are smooth and perfectly aligned. The fourth style is like the third but made with less care [18]. The archaeological researches have found that the polygonal work can be traced back to the late seventh century BC, while many other buildings of this type, can be dated to the end of the sixth century BC and the entire Republican period [18].

In Norba we can also find the presence of polygonal walls built in the first and second style [7]. According to Lorenzo Quilici and Stefania Quilici Gigli these walls originally ran along the entire perimeter of the town; after, they were replaced or incorporated, by the walls in the third-fourth style [7]. Then, the fortifications date back to the mid-fourth century BC [7]. In [18], the walls are dated back to the fifth century BC, in agreement to a Volscian occupation of the site. Other references on Norba are given at [21,22].

Haverfield's discussion on Norba The city is one of the best preserved examples in Italy of town planning dating back to ancient time. The recent excavations have shown the remains of several buildings, divided into blocks by parallel and perpendicular streets, including two acropolis with several temples.

For its urban planning, Norba attracted the interest of Francis John Haverfield (1860–1919) [23]. In his book on the ancient town planning [24], Haverfield largely discusses the Italian towns. According to [24], the Roman Empire offers a large mass of certain facts, both in Italy and in the provinces. But of the Italian town-planning, the beginnings, “naturally, are veiled in obscurity. We can trace the system in full work at the outset of the Empire; we cannot trace the steps by which it grew. Evidences of something that resembles town-planning on a rectangular scheme can be noted in two or three corners of early Italian history, first in the prehistoric Bronze Age, then in a very much later Etruscan town, and thirdly on one or two sites of middle Italy connected with the third or fourth century BC. These evidences are scanty and in part uncertain, and their bearing on our problem is not always clear, but they claim a place in an account of Italian town-planning. To them must be added, fourthly, the important evidence which points to the use of a system closely akin to town-planning in early Rome itself” [24]. In fact, Haverfield is referring to the Terremare, which were sites of the Bronze Age, to an Etruscan site near Marzabotto and to the towns of Pompeii and Norba. Of the discussion about Pompeii made by Haverfield, we talked in [25].

At the time when Haverfield was writing his book, the excavation of Norba was “little more than begun”. But this excavation was already showing a scheme of streets “somewhat resembling that of Pompeii ... The two together furnish examples of the town-planning of middle Italy of about 400-300 BC, in days that are only half historic, and thus help to fill the gap between the Terremare and the fully developed system of the Roman Imperial period” [24].

It is very interesting the link between Pompeii and Norba. As discussed in [25], Pompeii has a peculiar alignment of the main streets towards the sunrise on the summer solstice. In fact, also Norba has an alignment according to the solstices [26]. We can see the alignment directly on the satellite maps, using software SunCalc.net. The results are given in the Figure 4.



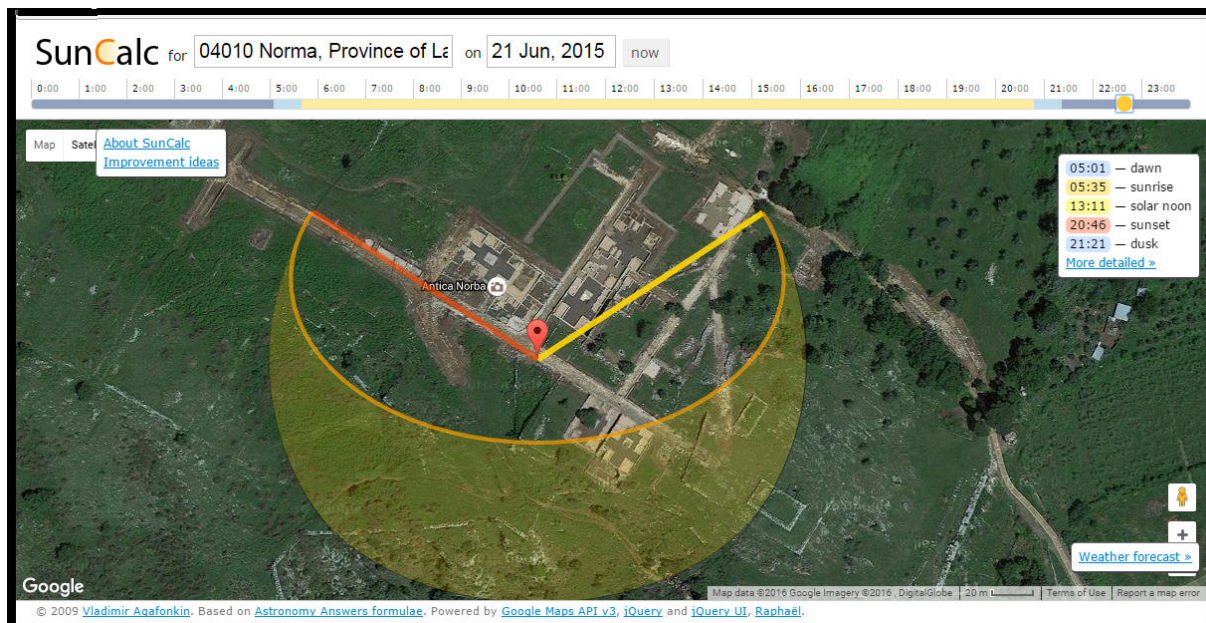


Figure 4: The alignment of the site of Norba along the sunrise and the sunset on solstices.

In the urban planning of Norba we can see the regular layout that we find in many Roman towns, where the town is planned according to a regular chessboard of parallel and perpendicular roads. This subdivision is like that of the land, which was obtained by a procedure known by “limitation” or “centuriation” [27]. In some of cases, the limitation has the main road, the decumanus, aligned along the sunrise/sunset on solstices [28]. Also a Roman fort in Britannia is showing this peculiar alignment [29]. These alignments reveal that there was a ritual connected to sky and astronomy.

Foundation ritual About such ritual, let us continue reading the Haverfield’s text. We have, in the Norba and Pompeii sites, “evidence relating to early Rome itself, and to customs and observances which obtained there. These customs belong to the three fields of religion, agrarian land-settlement and war. All three exhibit the same principle, the division of a definite space by two straight lines crossing at right angles at its centre, and (if need be) the further division of such space by other lines parallel to the two main lines” [24]. In this subdivision of the land, the “limitation”, the Romans involved the augurs, the persons practicing augury, able of interpreting the will of the gods by studying the flight of birds. “The Roman augur who asked the will of Heaven marked off a square piece of sky or earth - his templum - into four quarters; in them he sought for his signs. The Roman general who encamped his troops, laid out their tents on a rectangular pattern governed by the same idea. The commissioners who assigned farming-plots on the public domains to emigrant citizens of Rome, planned these plots on the same rectangular scheme - as the map of rural Italy is witness to this day” [24].

Haverfield continues: “These Roman customs are very ancient. Later Romans deemed them as ancient as Rome itself, and, though such patriotic traditions belong rather to politics than to history, we find the actual customs well established when our knowledge first becomes full, about 200 BC [30]. The Roman camp, for example, had reached its complex form long before the middle of the second century, when Polybius described it in words. Here, one can hardly doubt, are things older even than Rome. Scholars have talked, indeed, of a Greek origin or of an Etruscan origin, and the technical term for the Roman surveying instrument, groma, has been explained as the Greek word 'gnomon', borrowed through an Etruscan medium. But the name of a single instrument would not carry with it the origin of a whole art, even if this etymology were more certain than it actually is. Save for the riddle of Marzabotto, we have no reason to connect the Etruscans with town-planning or with the Roman system of surveying” [24]. From these words, it is clear the position of

Haverfield on the rituals concerning the limitation. They had origin in the Italic people, not necessarily from the Etruscan rituals. However, Haverfield explains, when “the Roman antiquary Varro alleged that 'the Romans founded towns with Etruscan ritual', (*oppida condebant Etrusco ritu*), he set the fashion for many later assertions by Roman and modern writers. But he did not prove his allegation, and it is not so clear as is generally assumed, that he meant 'Etruscan ritual' to include architectural town-planning as well as religious ceremonial. These are Italian customs, far older than the beginnings of Greek influence on Rome, older than the systematic town-planning of the Greek lands, and older also than the Etruscans” [24]. Let us note that, since the Etruscan ritual of land subdivision was based on the correspondence of the subdivision of the sky in four main parts [31], and further into sixteen sectors, where each section was under the protection of a specific deity, this ritual seems not so different from Haverfield’s ritual of Italic people concerning the land limitation [32].

There was - Haverfield continues - an “ancestral heritage of the Italian tribes kindred with Rome, and should be connected with the plan of Pompeii and with the far older *Terremare*. ... In their original character these customs were probably secular rather than religious. They took their rise as methods proved by primitive practice to be good methods for laying out land for farming or for encamping armies. But in early communities all customs that touched the State were quasi-religious; to ensure their due performance, they were carried out by religious officials. At Rome, therefore, more especially in early times, the augurs were concerned with the delimitation alike of farm-plots and of soldiers' tents. They testified that the settlement, whether rural or military, was duly made according to the ancestral customs sanctioned by the gods” [24]. It may be asked how all this applies to the planning of towns. “We possess certainly no such clear evidence with respect to towns as with respect to divisions agrarian or military”. But, as Haverfield observes, the Roman town-plans show very much the same outlines as those of the camp or of the farm plots. “They are based on the same essential element of two straight lines crossing at right angles in the centre of a (usually) square or oblong plot” [24]. This is a typical element of the urban planning, that “it may well be called Italian”.

“We need not hesitate to put town and camp side by side, and to accept the statement that the Roman camp was a city in arms. ... Whether the nomenclature of the augur, the soldier and the land-commissioner was adopted in the towns, is a more difficult, but fortunately a less important question. Modern writers speak of the *cardo* and the *decumanus* of Roman towns, and even apply to them more highly technical terms such as *striga* and *scamnum*. For the use of *cardo* in relation to towns there is some evidence. ... The silence alike of literature and of inscriptions shows that they were, at the best, theoretical expressions, confined to the surveyor's office” [24].

Saturn and the winter solstice In the framework proposed by Haverfield of an Italic ritual, we have an augur who was asking the will of Heaven by means of a space on earth - the *templum* - divided into four quarters. For the orientation of the *templum*, it is possible he used, besides the local morphology of the site, also the astronomical phenomena, such as the rising of the sun or the moon. In the case of Norba, an augur could have linked the local site to the sunrise on the winter solstice. For Romans, the winter solstice was very important. The week about this solstice was a period of the great celebrations (*Saturnalia*) of the god Saturn, the agricultural deity who reigned over the world in the Golden Age. Saturn was also identified by the Romans to the Greek Kronos, the god of time. During the *Saturnalia*, the goodwill of this Age was restored for seven days. All business and military operations were postponed and people made exchange of friendly visits and gifts. Also freedom was given to slaves; during *Saturnalia* they have first place at the family table and were served by the masters.

Macrobius, a Roman writer who lived during the early fifth century, composed a book on *Saturnalia*. He reports the myth telling that Saturn was the original and autochthonous ruler of the Capitolium, which had thus been called the *Mons Saturnius* in older times and on which once stood the town of *Saturnia*. He was considered the ancestor of the Latin nation being the father of *Picus*,

the first king of Latium [33] Saturn was also said to have founded the five Saturnian towns of Latium: Aletrium (Alatri), Anagnia (Anagni), Arpinum (Arpino), Atina and Ferentinum (Ferentino). Let us note that these towns, like Norba, are surrounded by polygonal walls.

It is therefore probable that the orientation of the town along the sunrise on the winter solstice, besides being suitable to the elevation profile of the site (Figure 3), was decided by the augurs also as an homage to the god Saturn, who ruled the Latium during the Golden Age.

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