



THE 1ST OF AUGUST AT LUGDUNUM: ASTRONOMY AND IMPERIAL CULT IN GALIA

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ABSTRACT

The longstanding debate about the interpretation of the *Concilium Galliarum*, celebrated at *Lugdunum* on Augusts 1st has been traditionally divided among those in favor of a 'Celtic' tradition and those advocating for a 'Roman' praxis. We advocate, following the works by Audin, that the study of the urban layout may shed light into this controversy. We find that this Roman grid has a remarkable orientation consistent with the orientation towards the rising sun on days close to this festivity. The location of the main sanctuaries of the city, the municipal sanctuary devoted to the imperial cult and the Three Gaul sanctuary, situated on both sides of the river, reveals interesting astronomical relations. These could be interpreted as an attempt at the time of the early Empire to include the Augustus and Rome cult even in areas with a strong pre-existent tradition, like the Gaul

KEYWORDS: Lugdunum. Imperial Cult. Roman City Orientation. Calendars. Celts.

1. INTRODUCTION

Caesar was the only Roman ruler to be deified while he was still alive. However, the Imperial Cult was shaped and developed during the reign of Augustus and his successors. Temples, priests and corporations were devoted to him at Rome and throughout the Empire. His image as a god on earth is frequent in contemporary art.

The Roman colony of *Lugdunum* (present day Lyon, France) was founded by Munatius Plancus, a lieutenant of Caesar, the 43 BC, a year after the assassination of the Dictator. Some years later, the 12 BCE, an altar devoted to the cult of Roma and Augustus was erected near the confluence of the rivers Rhône and Saône (Livy, *Per.* 139; Suetonius, *Claud.* II, 1). During the whole Roman times, a major festival was celebrated there on August 1st. Called the *Concilium Galliarum*, it constituted a great assembly where the representatives of 60 *ciuitates* from the three provinces in the Gaul gathered to worship Rome and Augustus (Strabo, *Geo* IV, 3.2).

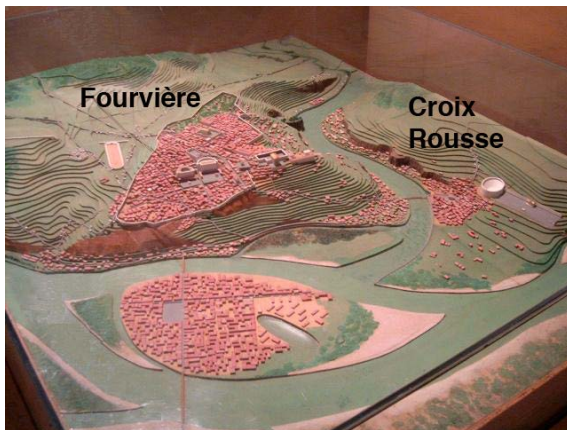


Figure 1: Scale model of the Roman colony of *Lugdunum* based on pre 1980's information. The main site was located on top of the Fourvière hill, where the theater, an Odeon and the Municipal Sanctuary of Imperial cult were located. To the other side of the confluence was the area where the *Concilium Galliarum* took place close to the Roman amphitheater.

The precise location of the altar of the Three Gauls is unknown, but it was situated on the slopes of a hill in the area of the present neighborhood of Croix-Rousse, near the remains of the Roman Amphitheater. The Roman colony was on the west bank, at the top of a plateau, overlooking the con-

fluence of the two rivers. At the heart of the colony were a number of prominent public buildings, like a Theater, an Odeon and a sanctuary possibly devoted to the Imperial Cult (see Figure 1).

2. IMPERIAL CULT AND ASTRONOMY

It was the same Munatius Plancus who proposed the title of Augustus ahead of the Roman Senate (Suetonius, *Aug.* VII.2) on 27 BCE. This way, the Senate was already admitting the supremacy, a 'divinity' of the ruler (Ittai Gradel 2002). However, after his dead Augustus was deified by the Senate and became a state god.

The Emperor was not worshiped as god until he died and was then converted into a divine entity, a *Divus*. In the mean time, he was worshiped by his *numen* or *genius* (Fishwick 1991). The emperor was represented among the traditional gods, thus linking his image to the divinities.

There is little evidence about the actual form of the ceremonies in the Imperial cult in the West. In most cases, a Temple was built which usually kept statues of the emperor, perhaps at the colonnaded fore-hall preceding the *cella* and where the priests in charge carried the State Cult. In any case, the ceremonies took place at particular dates, like, for instance, at the two days when the birthday of Augustus was celebrated (23rd and 24th September), the anniversaries of his victories, or the consecration of particular temples and altars (Fishwick 1991). Apart from these general dates, local shrines may have festivals at particular dates, like at *Forum Clodii* where the 10th of March the anniversary of the dedication of the statues of the Ceasars and of Livia was celebrated. One such local festival, although with a great preeminence in the Gaul, was that celebrated at *Lugdunum* dedicated to Rome and Augustus, according to Suetonius (*Claud.* II, 1).

Furthermore, it is a well-known fact that astrological images were part of the propaganda agenda of Augustus, perhaps also reflecting a Hellenistic tradition of using astronomical images to enhance the ruler cult (see Ferro & Magli 2012 for the connec-

tion between the orientation of the city grid in Alexandria and astronomy or Belmonte & González-García 2010 for the use of astronomy at the *Hierothesion* of Antiochus of Commagene). It was used on the occasion of the appearance of the so-called Caesar's comet on 44BCE. Octavianus used such appearance to highlight his role as sole heir of the *Divus Iulius* (Ramsey & Licht 1997). Astronomical images and relations have also been identified in several monuments built at his time, like the Pantheon or the *Horologium Augusti* in Rome (Hannah & Magli 2009; Rehak 2006).

According to Suetonius (*Aug* XCIV, 12), Augustus published his Horoscope, drawn by Theogenes the astrologer, where he was under the sign of Capricorn, a notice confirmed by Dio Cassius (LVI.25.5). It has been amply debated why, if he was born on the 9th before the *Kalends* of October, 63 BCE, this means nearly at Autumn Equinox, with the sun in Libra at this date, he had Capricorn (the sign which hosted the sun in winter solstice at the time) as his sign (see e.g. Barton 1995).

As part of his propaganda, a large number of coins were struck with such sign in its revers at the time of Augustus and his successors. Some of them were minted in *Lugdunum* as well. The Capricorn sign appeared in architectural decorations, in gems (such as the *Gemma Augustea*) and glass pastes (Galinsky 2012). It has also been recently claimed that the orientation of the *Cardus* of *Augusta Salassorum* (present day Aosta) could be connected to the rising of Capricorn at the time of foundation (Bertarione and Magli 2014).

3. GAULISH VS. ROMAN TRADITIONS

The interpretation of the cultural sense of August 1st for the *Concillium* is the subject for a longstanding debate that lasts for more than a century and opposes two well-defined historiographical positions.

On the one hand there are scholars who propose that August 1st originates in a Celtic or Gaulish tradition, latter inserted in the Roman life of the colony of *Lugdunum* and also through the Imperial Cult.

On the other hand, there are those scholars who find the importance for such date in the biography of Augustus and thus they tend to include such date for the festivity into the Roman praxis.

Summarizing the pro and co arguments, the Celtists highlight the similarity between the name of the colony (*Lugdunum*) and the name of the Celtic god Lug, and the medieval festival of *Lugnasad* celebrated in Ireland at the dates of the *Concilium Galliarum*. Meanwhile, the Romanists highlight that the evidence about the importance of that month for Augustus is clear, but not so much about the first days of the month.

The name *Lugdunum* is present from the beginning of the colonial period as it is attested by the presence of coins minted on 43-42 BCE with the legend LVGV/DVNI. The Gaulish name appears in the official name from the times of Claudius.

The meaning of the name *Lugdunum* (and its variations) has also been amply debated along the same arguments as before. The name can be easily divided in 'lug'+ 'dunum'. The Gaulish term *-dunon* is a common name in European toponyms, possibly indicating a height and also perhaps a fortress. It is in the name *lugu-* where the controversy arises. There are those who propose a link with the Celtic god Lug, but others propose a link with *Mons Lucidus*, thus the name of the city would be similar to present day toponyms in France, such as Montclair or Clermont. This controversy about the name and its significance continues until our days. It must be stressed though that the name of the city could be connected with both meanings, that of the Celtic deity which could also mean 'light', 'clarity' (see García Quintela and González-García 2014 for a recent review with bibliography on these issues).

4. THE ARCHAEOLOGY OF ANCIENT LUGDUNUM

The last two decades have witnessed a great boost in our knowledge about the early times of the Roman colony and about

the pre-Roman times, thanks to several archaeological excavations throughout the city and the new interpretations of the remains.

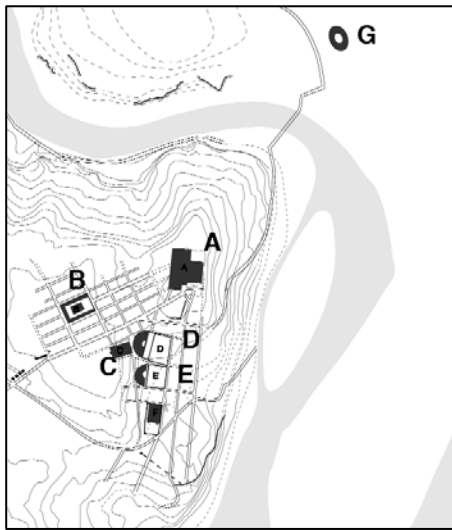


Figure 2: Roman archaeological remains in *Lugdunum*. (A) Area where the supposed Forum should be located (not yet excavated), (B) Municipal Sanctuary, (C) Pseudo-Cybeles building, (D) Theatre, (E) Odeon and (G) Amphitheatre and possible location of the Federal Sanctuary.

It should be first highlighted the importance of the area of the confluence among the pre-Roman peoples. This is particularly important in the area of the present neighborhood of Verbe Incarné in Fourvière, where a series of trenches filled with broken amphorae and animal bones have been unearthed. The excavators interpret this as the rests of feasts located at the site where the later public monuments of the colony would be placed (Poux 2003).

The vestiges unearthed during the last decades allowed the archaeologists to trace the first colony founded by Plancus at 43 BCE and the later modifications of the urban grid in the following decades until the mid first century CEAD (Desbat 2007). They indicate the possible presence of three phases: The first was that of the foundation of the colony. A second phase started around 20 BCE with modifications in the previous buildings and the construction of a first theatre and an esplanade in front of it. The buildings in the central part of Fourvière present two different orienta-

tions, probably to adapt the street grid to the local topography of the slopes of the hill. Between 10 and 30 CE the urban grid of *Lugdunum* became monumental, with the substitution of some houses by public buildings (see Fig. 2). The municipal sanctuary dedicated to the Imperial Cult was built at this epoch, during the reign of Tiberius, in the central part of this plateau. We call this sanctuary 'municipal' to distinguish it from the 'federal' one placed at the other side of the river in the Croix-Rousse. The Imperial Cult in the municipal sanctuary is attested by the epigraphic remains and consisted on a temple on a podium with massive dimensions (Thirion 2005, Le Mer 2007; see Fig. 3).



Figure 3: Scale model of the municipal sanctuary of Imperial Cult located at the heart of the Roman colony overlooking the confluence. The high podium would grant the prominence of the temple. Image courtesy of A.C. González-García and the Roman Museum of Lyon.

This well-defined picture contrasts with our knowledge about the altar of the Three Gauls consecrated to Rome and Augustus, as we know from Strabo (IV, 3.2). Audin (1979) situates such at an esplanade located next to the amphitheater close to the place where the famous *Tables Claudiennes* appeared. Such tables include the speech in front of the Senate by which the emperor Claudius, born in *Lugdunum*, gave access to the Roman Senate to aristocrats and rich men from Gaul.

Franscone (2011) has recently challenged this hypothesis on the location of the altar. Based on a comparison with other major

sanctuaries along the Roman World and the local topography, Frascone situates the Altar at the top of the hill of the Croix-Rousse, highlighting the scenography of the sanctuary, with three avenues climbing up the hill from a lower flat area located next to the amphitheater.

Structure	A (°)	h (°)	δ(°)	Dates
Urban grid 1	63	0½	18.8	15 may / 29 July
Urban grid 2	66	0½	16.9	7 may / 5 August
amphitheater (major axis)	141¾ 321¾	0 0	-33¾ 33¾	-----
Amphitheater (minor axis)	231¾ 51¾	2¾ 0½	-23½ 26	WS
Amphitheater to Municipal sanctuary	221¾	3¾	-28½	SML
From Altar to Municipal sanctuary	222	1½	-30	SML

Table 1: Measurements performed in Lyon. The columns indicate the structure measured, the azimuth and horizon height and declination derived from these measurements, considering refraction. Finally the corresponding sunrising dates or possible astronomical targets are indicated.

5. THE ORIENTATION OF THE CITY AND ITS SANCTUARIES

Early measurements of the colonial grid provided a date of foundation for the colony, establishing that date on October 11th based on the assumption that the *decumanus maximus* was located under the rue Cleberg (Audin 1949). Today such hypothesis has to be corrected in the light of the new archaeological discoveries just described ~~signed~~. Desbat (2007) describes that the *decumanus maximus* is possibly under the present day Rue Roger Radisson, next to the Roman Museum.

The first author measured the main orientations on site in a visit to Lyon on April 2011.

To measure the azimuth and horizon height, we have used a high precision compass and clinometer. The instrumental error of an individual measurement is $\pm 1/4^\circ$ for the azimuth and $\pm 1/2^\circ$ for the angular height. Although measuring magnetic azimuths in urban areas could be subject local magnetic alterations, most places are locat-

ed in municipal parks and archaeological areas within the city. Several measurements were carried out at the different sites in order to check for possible local magnetic alterations. In all cases the deviations are found less than $1/2^\circ$. Indeed, the precision of the measurement will be primarily hampered by the state of preservation of the remains. The azimuthal data are finally corrected for magnetic declination using some of the topographical features measured and the data provided by the magnetic declination calculator of the NOAA (www.ngdc.noaa.gov/geomag-web/). In those cases where the angular height could not be measured due to blocked horizons, and in those cases where we wanted to check for visibility issues, we have used a Digital Terrain Model readily available in the Internet at: <http://www.heywhatsthat.com>. The final estimated error in declination is of nearly 1° which translates into 1 to 2 days error when comparing to rising or setting dates.

It was impossible to obtain a direct measurement of the orientation of the urban grid and the Municipal sanctuary in the area of the Verbe Incarné, due to the building of a complex of houses in the area. These data were obtained from good quality maps from the excavation reports adequately corrected by measurements on site of the present day streets (particularly Rue Roger Radisson).

The orientation measurements are given in Table 1 and in Figure 4 (see also, Tabs. 1 and 2 of García Quintela and González-García 2014). There we indicate the orientation of each structure and the declination after considering the horizon height, and the astronomical target or the date for such magnitudes in a Gregorian proleptic calendar.

It must be stated here that for the years right after the Julian and Augustan reforms both the Julian and Gregorian proleptic calendars coincide. However we must bear in mind that for the years between the Julian and Augustan reforms there is an error in the introduction of the bissextile years

that breaks such agreement introducing an additional source of error in the determination of the dates (Bennet 2003; González-García and Belmonte 2006).

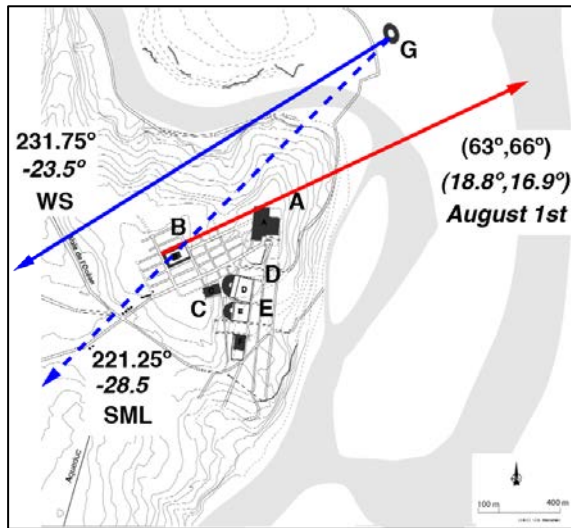


Figure 4: Orientations measured at the site of *Lugdunum*. Labels are as in Fig 2. Solid red line gives the orientation of the Roman grid and the Municipal sanctuary. Solid blue line is the orientation of the minor axis of the amphitheater. Dashed blue line is the orientation of the Municipal sanctuary as seen from the Federal sanctuary. The figures provide the Azimuth, declination and the possible astronomical target. WS stands for winter solstice. SML stands for southern major lunistice. For the details see text.

It is important to note that August 1st seems to have been an important date in the early urban grid of the colony, more than three decades before the foundation of the Federal sanctuary and the altar of the Three Gauls, where the festivities took place on that day. Also, according to such measurements the Municipal Sanctuary would be facing sunrise on dates at the beginning of August.

The orientations of the elements in the area of the Croix-Rousse indicate that the minor axis of the amphitheater is oriented towards Winter Solstice sunset while the highest point of Fourvière, and the area where the municipal sanctuary was located would correspond with moonset on the southern major lunistice. At first sight, this seems to indicate a pre-eminence of solstitial or lunar extreme events. (next to the large antenna in Figure 5).



Figure 5: View of Fourvière from the Roman Amphitheatre on the Croix Rousse hill. The right edge of the summit of the plateau is where sunset on Winter Solstice would be spotted from this place, coincident with the minor axis of the amphitheater. Slightly to the left of the large antenna is the direction where the Municipal Sanctuary would be seen and also the direction towards moonset on the southern major lunistice. The whole area coincides with the declinations for the setting of Capricorn for the epoch of the turn of the Era, as seen in the image.

6. DISCUSSION: CELTS, IMPERIAL CULT AND ASTRONOMY IN LUGDUNUM.

We know very little on the astronomical usages of the Gaul at the time of Roman conquest. Caesar indicates that the Druids were in charge of marking the time cycles and the movements of the stars (*De bello gallico* VI, 18). He indicates that they measured the time basically by the moon. This was somehow corroborated archaeologically with the discovery by the end of the XIX century of the Coligny calendar, just a hundred kilometers away from Lyon. Such calendar divides the year in 12 months of 29 or 30 days and tries to match the movements of the sun and the moon in a period of 5 years with several intercalations (see Duval and Pinault 1985 or McCluskey 1989 for details). It is important to note that the year was divided in a light and dark halves. At the middle of the light half of the year would be the festivity of Lugnasad near the beginning of August. It is thus in ~~after~~ the epigraphic and archaeological

remains that we find ~~clear~~ evidence that the Gaul were interested in following the moon for timekeeping. Thus, it would not be surprising that in Roman times such interest was incorporated in the orientation of certain ritual buildings.

As abovementioned, according to the recent archaeological discoveries, the early urban grid of the colony, founded on top of a possible pre-Roman festival site, followed an orientation consistent with dates at the beginning of August (see Table 1). At this site, at the time of Tiberius a municipal sanctuary devoted to the imperial cult (to *Divus Augustus*) was built with basically the same orientation (see Table 1). On the other side of the river, the area of present day Croix-Rousse had a sacred area where a major celebration dedicated to the Emperor and Rome was celebrated on August 1st.

It is important to note that this last Federal sanctuary is located in an area such that the visibility of the sacred areas in Fourviere coincided with sunset at the winter solstice or the moonset at the major southern lunastice.

On the one hand, the celebration of the August 1st mentioned in the texts, talks about a meeting of all representatives of the tribes in the Gaul, and thus points towards a Gaulish festival. The same date appears in the orientation of a Gaul sanctuary at Corent (a mere hundred kilometers west of Lyon). There a ditched squared enclosure has its opening towards a prominent hill (Puy de Saint-Romain) in the nearby horizon on top of which the sun rises on August 1st (Romeuf 2011). However, the orientation of Roman cities towards dates close to August 1st seems to be an exception (see González-García et al. this volume for a recent review on Hispania). Apart of the so-called midseason festivals, it is clear that other seasonal markers were important for the Gaul. An example of such is the orientation of the monumental pond in Bibracte, the capital of the Eudeans, 140 km north of Lyon. This pond was designed through the intersection of two circumferences, whose centers are placed on the solstitial line (Almagro-Gorbea and Gran-

Aymerich 1991). We find a parallel in the orientation of the amphitheater in Lugdunum. All these may point to a Gaulish milieu, although more measurements in the area should be desire to establish possible trends in orientations.

On the other hand, *Lugdunum* is a Roman foundation; the Altar of the Three Gaul was built and dedicated by rich men with Roman names. The Municipal sanctuary was built in the middle of the Roman colony and both sanctuaries were devoted to the Imperial cult. All these items seem to point to a clear Roman praxis.

Furthermore, as explained above the use of astronomical images and astronomical orientations was important at least since the time of Augustus (Bertarione & Magli 2014; Rehak 2006). Especial attention should be given to his massive use of the astrological sign of Capricorn.

It comes to no surprise to discover that the orientation mentioned above of the minor axis of the amphitheater or the general view from the Federal sanctuary in Croix-Rousse towards Fourvière is also compatible with the direction towards the setting of Capricorn on those dates. The constellation spanned a range in declinations from the -16° of Algedi, to the -23° of Deneb Algedi and the -32° of α Capricorni. In this sense, it is important to note that Algedi, $\alpha\beta$ Capricorni, set at the beginning of August (calculated with the Alcyone software, including refraction, at the time of civil twilight). In other words if we would place ourselves near the location of the Federal sanctuary at the time of the celebration of the *Concillium Galliarum* (beginning of August) we could see the Emperor's sign setting on top of the Municipal sanctuary (dedicated to the Imperial Cult) before the sun rises and lights the front of this same sanctuary, perhaps also illuminating its interior.

It must be stressed here that all these events seem to be culturally important either for the Gaul (WS or lunar reckoning) or for the Romans (the link with Capricorn, WS and Augustus).

In this sense, we find that such an ensemble perfectly fits in a milieu of Gaulish traditions read under the Roman praxis and imbued into the Imperial Cult through its usages and implications (García Quintela & González-García 2014). In other words, we believe that the orientation and placement of the sanctuaries (Federal and Municipal) respond to both Roman and Gaulish principles. Something not at all surprising when we find that the first priest of the altar of the Three Gauls was C. Iulius Vercondaridubnos Aeduuus a person identified with four words, two Latin names indicating his Romanity, two Gaul names indicating his family name and ethnic group as a Gaul, and the first three names his Roman citizenship.

7. CONCLUSIONS

The orientation and placement of the Roman monuments built at the time of the change of Era in the Roman colony of Lyon appear to respond to the dynamics of the time. One of the main Gaulish festivals was incorporated into Roman praxis of orienting the town early on. Such moment was

latter incorporated in the celebration of the *Concilium Galliarum* on August 1st at a sanctuary located on the other side of the river, with a commanding view of the area where the main buildings of the colony were located. Such sanctuary was devoted to the worship of Rome and Augustus and from such place on the dates around the celebration of the *Concilium*, Capricorn, the Emperor's sign could be spotted setting right before sunset on top of the Municipal Sanctuary dedicated to the cult of the Emperor. Besides, on that date the sun would rise in line with this sanctuary illuminating its front façade and perhaps displaying some light effect in the interior.

In our view, all this highlights the intricacy of both Gaulish and Roman traditions at this site. It would be interesting to see if such traits were followed at other sites in Gaul or at other cities founded or reformed at the time of Augustus in the west of the Roman Empire.

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