The House of Eternal Time: An Archaeoastronomical Study of Chartaqi and Mithraic Cosmology

Reza Assasi, School of Architecture, McGill University, Montreal

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Contents

Abstract

This thesis studies the relationship between architecture and cosmology based on recent research in the interdisciplinary field of Archaeoastronomy. The main objective of this study is to understand the symbolic morphology of ancient Iranian structures called chartaqi. These structures characteristically incorporate a dome built on a cross and are intentionally and accurately aligned with particular astronomical references of the horizon.

Taking the recent discoveries of the astronomical alignments of chartaqi as a starting point led to the discovery of identical astronomical alignments in similar Roman structures. These parallels are shown in detail in this thesis. Based on an analysis of these alignments and an investigation of Mithraic artefacts, the author argues that the concepts incorporated in chartaqi are based on Mithraic cosmology. In order to support this argument, this thesis develops an original framework to understand Iranian Mithra and the Roman mystery cult of Mithraism.

Résumé

L'objectif principal de cette recherche est d'étudier la relation entre l'architecture et la cosmologie fondée sur des recherches récentes dans le champ interdisciplinaire de archeoastronomy. Dans cette étude, le principal problème est de comprendre la morphologie symbolique d'une structure ancienne iranienne appelle chartaqi dans lequel un dôme construit sur une croix et est volontairement et avec précision à alligned notamment des références astronomiques de l'horizon.

Prendre les découvertes récentes des allignments astronomiques de chartaqi comme point de départ a conduit à la découverte des allignments astronomiques identiques dans les structures romaines semblables qui est représenté en détail dans cette thèse. L'auteur soutient que les concepts incorporés dans chartaqi est basé sur la cosmologie de Mithra et propose un cadre d'origine pour comprendre la relation entre iranien Mithra et Roman culte de Mithra.

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List of Illustrations

Chapter 1 Overture

Geh unter, schöne Sonne, sie achteten
Nur wenig dein, sie kannten dich, Heilge, nicht.
Denn mühelos und stille bist du
Über den Mühsamen aufgegangen.

Mir gehst du freundlich unter und auf, o Licht!
Und wohl erkennt mein Auge dich, herrliches!
Denn göttlich stille ehren lernt ich,
Da Diotima den Sinn mir heilte.

O du, des Himmels Botin, wie lauscht ich dir,
Dir, Diotima! Liebe! wie sah von dir
Zum goldnen Tage dieses Auge
Glänzend und dankend empor. Da rauschten

Lebendiger die Quellen, es atmeten
Der dunkeln Erde Blüten mich liebend an,
Und lächelnd über Silberwolken
Neigte sich segnend herab der Äther.

Go down, lovely sun, they paid
little heed to you; they knew you not, holy one.
For effortlessly and silently you
rose over those who must work hard.

To me you are friendly, rising or setting, o Light,
and indeed my eye recognizes you, magnificent one!
for I learned divine, quiet respect
when Diotima healed my mind.

O you messenger of Heaven, how I listened to you,
to you, Diotima, love! How my eye gazed from you
to the golden day,
upward, gleaming and full of thanks. Then murmured

the springs more vitally, breathed
the dark earth's blossoms lovingly on me,
and smiling over silver clouds,
the sky bowed down in blessing.[1]

[1] Friedrich Hölderlin, "Geh unter, schöne Sonne...," trans. Glenn Paton, *LiederNet: The Lied, Art Song, and Choral Texts Archive*, posted May 26, 2004, www.recmusic.org/lieder/get_text/html?Textid=22404.

Friedrich Hölderlin wrote the poem “Go down, lovely sun” in 1799. The acute nostalgia in his poem would have sounded poignant in its own era, but today it seems to tell a simpler story. We no longer remember the lovely sun as it appears in this poem. When we talk about love and the sun, we know how to write and pronounce their names, but they no longer exist as symbols of greater meaning in our language. In school, our children are taught about the sun only as an energy source, like a nuclear plant, made of chemical elements written on top of Mendeleev’s periodic table. That is why relating love to the sun now is incomprehensible.

Hölderlin’s sun went down forever some eighty years after this poem was written, in New York city when Thomas Edison switched on electric lamps in one of the streets of Manhattan in December 1880. It would have been almost Christmas Day or close to New Year’s Eve, which both recall an ancient ritual for the divine sun. Every winter solstice people used to stand a vigil in order to see the first winter sunrise, bringing life back to the earth, extending the length of the days. That day, which had been the birthday of the sun, changed to the birthday of the lightbulbs of Manhattan, a city which filled up with man-made mountains covered with electric stars and blue reflective glass.

In fact, it was not technology which wiped out our divine world; instead, a change in the basic way we think about the natural world lies beneath the emergence of our demystified world. Since the Renaissance, and in particular since the Enlightenment, we have mathematized and objectivized the sun, the earth, the sky, and whatever divine legacy we had. We now find ourselves disconnected from the heavens and detached from nature. Nature has gradually come to be regarded as a world apart from human affairs.

The reality of what we call architecture today includes discourse about stock markets, financing, and management, which can seem to be not only related to the profession, but the only vital issues in the field. In such an environment, talking poetically about the sun is a digression. Nowadays, in north America, we need a symbol for the sun to be shown in our calculative designs as a fashionable clean energy source, to be used to name our luxurious buildings "green," while we cover the sky by competing to reach the maximum height for raising skyscrapers. Perhaps some fake images of the sun in a blue sky or the starry firmament can be found in architectural drawings as an inanimate background for digital perspective images – images on the basis of which people buy buildings even before construction.

Talking about architecture in relation to love or the sun and sky requires a paradigm shift. This shift does not mean returning to the ancient world, but instead that some of the rich meanings of tradition sould be reclaimed for a new understanding of the world.

Ancient civilizations have formed our world of today. Myths, rituals, ethics, art, literature, and all the complex matters which distinguish us from other creatures are elements of an evolutionary cultural trend of thousands of years. History is more than a story of the past or just a way to find answers for those who are curious about knowing what happened to their ancestors. It is an ineradicable part of our present and future. Human beings connect themselves to the world by dwelling on the earth. The history of architecture in particular, beyond its simplified modern definition as a history of shelter- and tomb-building, reflects many facts and secrets of our being as humans, and helps us to understand our modern identity along with our achievements and mistakes.

The sky and the earth have always been dominant factors in myths. Myths do not belong to the rational mind. They are not invented; they are found by the collective unconscious through poetic and symbolic realizations and insights. They open the mind of people living in a particular society to the mysterious dimension of being that cannot be analyzed; they present an image of the cosmos that connects the transcendent to the world of everyday experience, and they present a social order by which people can be coordinated to the mystery of being. The poetic images that mythologies are composed of are only a symbolic mask to reflect human perception and the unconscious experience of life that cannot be contextualized in rational thinking.

The very fundamental function of myth is completely forgotten in the modern world. This neglect, which has led to the rational and demystified approach towards knowing the universe, is implicitly intrinsic to the western tradition, with roots that seem to be found in major cultural and historical shifts in both Greek and Judeo-Christian origins even centuries before the modern era or the enlightenment.

In the Old Testament the archetypal symbols became interpreted as facts. Since then, God seems to be an individual fact, not a symbol; heaven is not a concept, but a place; and with the Fall in the Garden of Eden the human being was exiled from that holy place to nature. The mythical primordial events, which take place in infinite space-time, become understood as parts of a linear historical timeline, creating a pseudo-history composed of both historical and mythical events.

Greek mythology was also transformed from its original ritual symbols to a new form in which consciousness was awakened towards myth. We cannot find any Greek myth in its ritual context. Although this new way of understanding myths inspired epic poetry, tragedy, comedy, and plastic arts, rewriting the myths also gave grounds for the taking over of the common

consciousness from absolute collective unconscious. The modern understanding of the word "myth" as a synonym for "fiction" has roots in the similar interpretation of the word "mythos" in Greek culture.

No wonder religion in the western tradition is based on faith, not religious experience – a real experience of the perception of truth through rituals and symbolism. Although the mythical functions were preserved or spontaneously reappeared in some forms of mysticism in western traditions, including Judaism, Christianity, and Islam, they were not justified or generally accepted inside the structure of these religions, and were commonly condemned as heresy by the orthodox.

Architecture inarguably preserved the history of early civilizations in its solid body better than any other material. Words might have been forgotten, books might have been burnt, but palaces and temples were the last to be destroyed and were rarely wiped out without leaving any footprints. Despite transformations over time, the morphology of architectural traditions passed from generation to generation and from civilization to civilization while preserving their core concepts.

This thesis uses a comprehensive approach to the history of architecture to tackle one of the most controversial and yet unsolved problems of the study of antiquity. The journey began in the year 2000, when I traveled to a mysterious land in southwest Iran, to the town of Kheyrabad, to visit an ancient building which had preserved a great secret for two millennia. This structure is today called a *chartaqi*, a modern name which literally means "four-arch." The morphological and cosmological questions about the concepts behind the solid geometry of this structure led to an interdisciplinary study that I present in the following chapters.

The main objective of this research is to study the relationship between Architecture and Cosmology based on recent research in the interdisciplinary field of Archaeoastronomy.[2] In this study the main problem is to understand the symbolic morphology of chartaqi, in which a dome built on a cross is intentionally and accurately aligned to particular astronomical references of the horizon. Taking the recent discoveries of the astronomical alignments of chartaqi as a starting point and developing a hypothesis about the relationship between the symbolic geometry of chartaqi and ancient Iranian Mithraic symbolism, I began to investigate ancient Iranian literature and to search for archaeological counterparts for chartaqi in the west, where the concept of Iranian Mithra flourished in a popular Roman mystery cult in the first to fourth centuries. This attempt led to the discovery of astronomical alignments identical to those of chartaqi in similar Roman structures. The details of this study are demonstrated in the second chapter of this thesis.

All these discoveries revitalized my initial hypothesis and led me to reinvestigate the concept of Mithra in the east as well as in the Roman cult of Mithras. Roman Mithraism is one of the most controversial and unsolved problems of Roman antiquity. I took a comprehensive approach to this problem to build a rational and analytical framework that brings together the eastern and western Mithra. The third and fourth chapters of this thesis give important background information for this framework. In the third chapter I present an overview of Mithraism, and in the fourth chapter I introduce some important modern theories and studies in the field of Mithraic studies in order to demonstrate the depth of the problem and the origins of controversies and misunderstandings among modern scholars in the field.

[2] Archeoastronomy is an interdisciplinary field which investigates how people in the past understood and used the phenomena in the sky, and what role the sky played in their rituals, culture, and beliefs.

Chapters five and six use the framework that I propose to solve some important problems of Mithraic studies. In applying this framework I have tried not to confuse any data from the second chapter or to push interpretations about the connections between Roman structures and Iranian chartaqi, in order to avoid any prejudgments in interpreting Mithraic symbols or in attempting to reconcile the Roman and Iranian Mithra. In fact, I built a rational framework for understanding Mithraism in order to solve the initial problems in understanding chartaqi, and not vice versa. Thus my cosmological framework for Mithraism, which is introduced in these two chapters, could be a stand-alone theory on Mithraism, but in the context of this thesis forms a part of my investigation on the symbolic geometry of chartaqi.

In chapter six I concentrate on the cosmological concepts behind the core Roman Mithraic symbols, and in chapter seven I use this information to interpret Iranian symbols incorporated in chartaqi, such as the cross of eternity and the revolving cosmos upon which chartaqi seem to be constructed. In this chapter I return to the initial problem of my thesis and indicate that this problem goes beyond chartaqi, showing how the same symbols that are crystalized in chartaqi are repeated in other architectural forms.

In bringing together information from architecture, religious scripts, astrology, poetics, philosophy and mythology, this study blurs disciplinary boundaries in its attempt to uncover the place and meanings of cosmological images in the architecture of the ancient world.

Chapter 2 Chartaqi

2.1 Introduction to Chartaqi

Chartaqi (*châhâr-tâq-i*) is a general name for structures with symmetrical form consisting of four pillars and four arches supporting a dome. (In the Persian language, *chahar* means "four" and *taq* means "arch.") In plan chartaqi are a square surrounding a cross and a circle.

The term *chartaqi* in general refers to a basic typology of structure in Iranian architecture. In this typology four arches holding a dome appear as a part of a bigger structure that commonly shapes the core spaces. Most mosques, temples, palaces and churches of the Islamic era are considered to embody this structural form.

More specifically, the term *chartaqi* refers to structures approximately two thousand years old, the ruins of which remain to this day in central and southwest Iran. They were originally built freestanding and open on four sides without any doors or windows. The original name and function of these chartaqi is still unknown and this name seems to have been given relatively recently because of the shape of the structure. In this study the term *chartaqi* will be used to refer to the specific meaning. The term "four-arch" will be used to refer to the general meaning.

Because four-arch structures were first introduced in chartaqi in Iran, the chartaqi is considered the prototype of four-arch structures in Iranian architecture. In addition, fundamental concepts of Iranian architecture such as orientation to four directions, a square plan embracing a circle, dome, and a cross, all flourished purely and simply in chartaqi (fig. 2.1). The chartaqi is usually seen as the most simple, and yet perfect, prototype of Iranian architecture and as a basis for

describing the development of structural and morphological concepts from ancient times to the Islamic era.

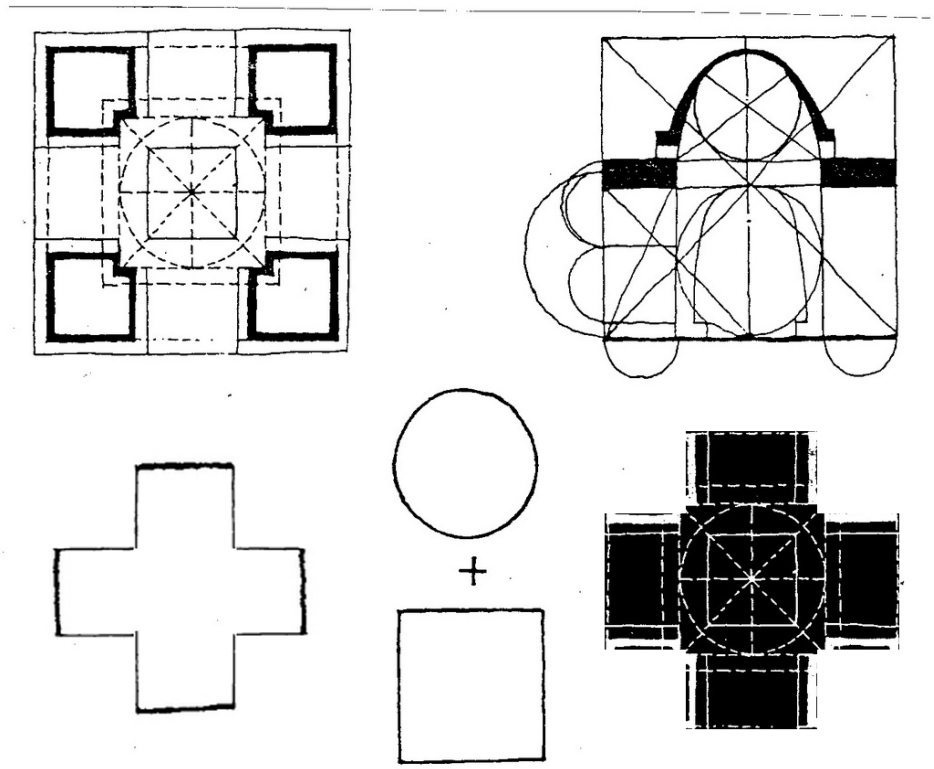

Fig. 2.1. Plan and section of a chartaqi and a morphological analysis of chartaqi. Modified by author from sketches by Nader Ardalan.

Chartaqi connect early Persian architecture and Islamic architecture by preserving and carrying over important spatial and geometric patterns from one tradition to the other – patterns which always immutably reappeared, from the Achaemenid garden-palaces of Persepolis to Safavid Meydan and the Jami Mosques of Isfahan. Although it seems difficult to portray such a long timeline in the history of architecture with reference to a simple structure, the chartaqi has a key position as the clearest reference point for architecture in the middle of the ancient world and at one of the most important transitional moments in architectural history.

The Iranian plateau has preserved lots of secrets about the history of the ancient world. Orientalists have put in considerable effort to discover this land, yet because of the difficulty of working on interwoven historical layers and the complicated and controversial history of ancient Iran, as well as geopolitical issues, the trend of discovery has been slower than in the occident. Furthermore, the classic approach of early Orientalists who worked on Iran decades ago resulted in the production of classified archaeological survey reports rather than comprehensive analytic data.

In the case of the chartaqi structures in particular the research is not any better. Since among scholars there has been no reliable explanation for the purpose of these structures, the chartaqi was mistakenly classified by many archaeologists as a Zoroastrian fire temple, despite the fact that no evidence could be found to prove that this was the case. In fact, there is evidence to the contrary. The sacred Zoroastrian fire had to be kept alive for years, and was required to be maintained far from any pollution and direct contact with people, which must have been impossible in a chartaqi because it is open on all sides. The real Zoroastrian fire temples are located in cities or inside royal-religious complexes. None of the chartaqi structures are comparable to any Sassanid fire temples, such as Azar-Goshasp in northwest Iran or Firoozabad in Fars, despite the apparent similarities of the ruins of their core structures. As far as we know, chartaqi structures are not adjacent to any major communities. In addition, chronologically they should not belong to Sassanid traditions, because even if not all chartaqi were built during the Parthian era they do not belong later than the very early Sassanid dynasty.[3]

[3] R. M. Ghiasabadi, C*hartaqi-ha-i-Iran* (Tehran: Iranshenasi, 2008), 11.

2.2 Astronomical Alignments in Chartaqi

In the year 2000, an Iranian archeologist, R. M. Ghiasabadi, unveiled a part of the mysterious function of the chartaqi of Niasar, demonstrating that it is accurately oriented according to the solstice and equinox sunrise. Subsequently, he documented similar observations and surveys on other chartaqi structures and claimed the same phenomenon happening in other cases.[4] I took this discovery as the starting point for my study. Here, I briefly introduce current discoveries on Iranian chartaqi. The diagrams of Iranian chartaqi structures in this chapter are based on Archaeological survey reports by Ghiasabadi.

The Chartaqi of Niasar

Latitude: 33° 58' 16.95" N
Longitude: 51° 8' 31.10" E
Elevation: 1,730m

The chartaqi of Niasar is located in central Iran and is the best-preserved chartaqi in the world (figs. 2.2, 2.3). It is located 30km from the city of Kashan, on the heights to the west of the city, and overlooks the fields 380m below on the northeast side and mountains of the same height on the east and south. No direct reference is made in historical texts to this structure or any other chartaqi as far as is known. At a proximity of 70m to the structure there is a natural spring and an old tree. There are other archaeological sites nearby, including an ancient cave used for unknown

[4] Ghiasabadi, C*hartaqi-ha-i-Iran*.

religious rituals and possibly a temple close to the spring which has now been destroyed and replaced by a mosque.

Fig. 2.2. The chartaqi of Niasar, December 2010 after the winter solstice sunrise. Photograph by author.

Fig. 2.3. Chartaqi of Niasar: The best preserved Iranian chartaqi. Ghiasabadi, C*hartaqi-ha-i-Iran*, 10.

The first archaeological report on this structure is by Andre Hardy in 1937, later cited by Andre Godard in his book *Athar-i-Iran* (*The Monuments of Iran*). Hardy and Godard proposed that this

structure was a navigation monument.[5] Nowadays, this structure is often described as a Sassanid Zoroastrian fire temple built by Ardeshir I (180–242 AD), a popular misinterpretation of this ancient monument that is not based on any archaeological evidence.

More recent studies show the astronomical alignment of this structure to the solstitial and equinoctial orientations: scientific evidence that shows the original intentions of the designers of the structure but leaves us with no further explanation about its function (figs. 2.4–2.8).

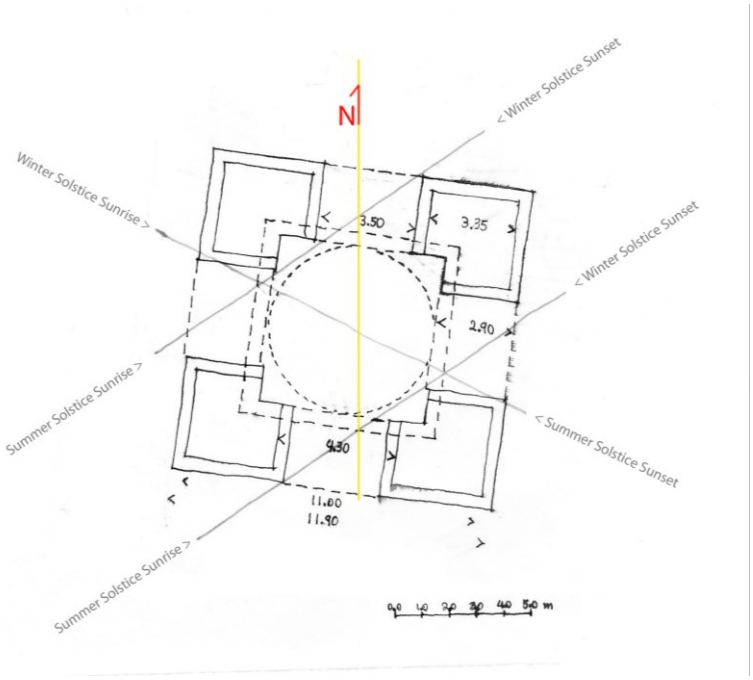

Fig. 2.4. Solstitial orientations in the chartaqi of Niasar. Diagram by author.

[5] André Godard, *The Art of Iran: Annales du Service Archéologique de l'Īrān* (New York: Praeger, 1965), 182.

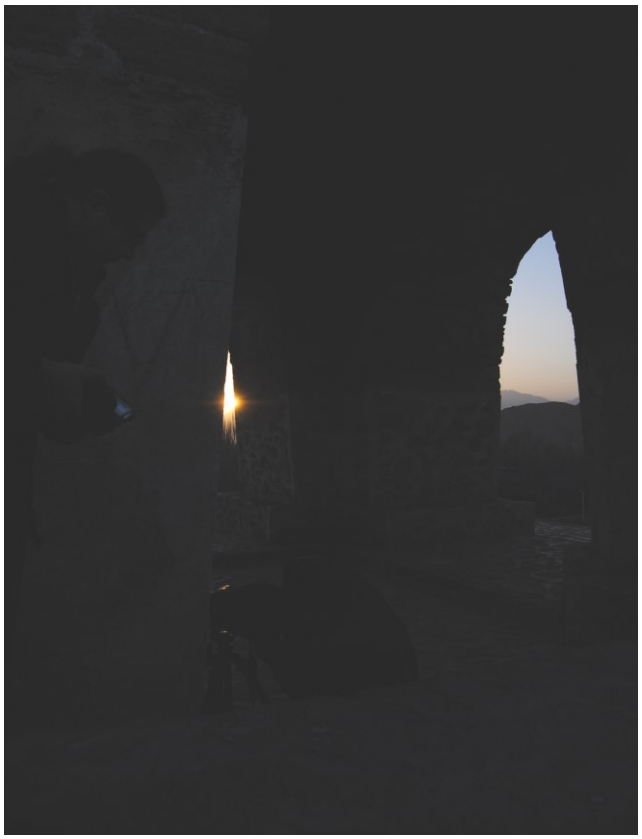

Fig. 2.5. Winter solstice sunrise in the chartaqi of Niasar, December 2010. Photograph by author.

Fig. 2.6. Winter solstice sunset at the chartaqi of Niasar. Ghiasabadi, C*hartaqi-ha-i-Iran*, 28.

Fig. 2.7. Summer solstice sunrise (SS1) at the chartaqi of Niasar. Ghiasabadi, C*hartaqi-ha-i-Iran*, 19.

Fig. 2.8. Summer solstice sunrise (SS2) at the chartaqi of Niasar. Ghiasabadi, C*hartaqi-ha-i-Iran*, 20.

Bot-Khaneh: The Chartaqi of Atashkuh

Latitude: 33° 52' 20.74" N

Longitude: 50° 38' 1.15" E

Elevation: 1,720m

Bot-Khaneh is a chartaqi in a village called Atashkuh. It is partly ruined but the surviving part suggests that it was one of the largest of its type with a width of 12.5m on each side. What remains from this chartaqi are the ruins of four pillars up to 10m in height; the four arches and the dome of this structure have not survived. The middle part of its pillars gives a unique characteristic to this chartaqi: it was built with a heart-shaped plan, while the solstitial and equinoctial observation angles are made even more accurate than other chartaqis. The other interesting characteristic of this chartaqi is the remnant of an altar in the center (figs. 2.9–2.12).

Fig. 2.9. Bot-Khaneh: The chartaqi of Atashkuh. Ghiasabadi, C*hartaqi-ha-i-Iran*, 32.

Fig. 2.10. A pillar of Bot-Khaneh. Ghiasabadi, C*hartaqi-ha-i-Iran*, 33.

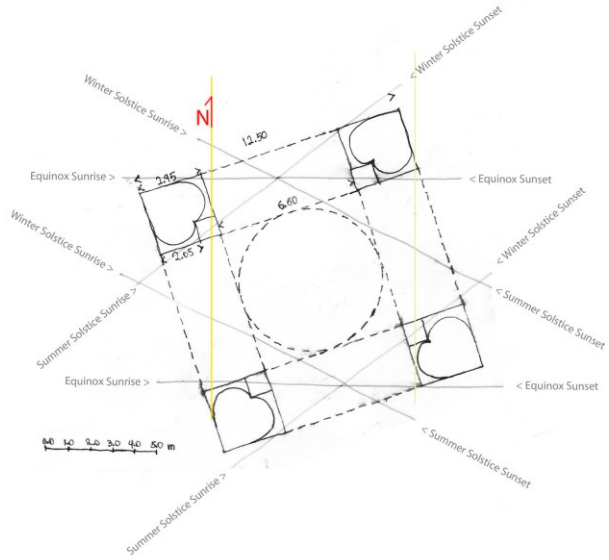

Fig. 2.11. Solstitial and equinoctial alignments in Bot-Khaneh. Diagram by author.

Fig. 2.12. Winter solstice sunrise at Bot-Khaneh. Ghiasabadi, C*hartaqi-ha-i-Iran*, 39.

The current name, Bot-Khaneh, is probably a relatively recent name and means "the house of the idol" in Persian. This fact makes the name more important, as it suggests there is a statue missing from the middle of this chartaqi. On the northwest side are the remnants of a wall which Ghiasabadi reports is a later addition to the chartaqi, but the physical characteristics of the main structure are similar to those of other chartaqi and are categorized by Ghiasabadi as late Parthian or, less likely, early Sassanid.[6]

The Chartaqi of Nevis

Latitude: 34° 44' 5.93" N

Longitude: 50° 11' 29.00" E

Elevation: 1,825m

[6] Ghiasabadi, *Chartaqi-ha-i-Iran*, 35.

The chartaqi of Nevis was recently restored but the dome was not rebuilt. The plan of this chartaqi is about 9m by 9m and its axis has 18 degrees from the north. Like the chartaqi described above, the chartaqi of Nevis is also oriented towards solstitial and equinoctial alignments (figs. 2.13–2.17).

Fig. 2.13. The chartaqi of Nevis. Ghiasabadi.com, "Nevis."

Fig. 2.14. Winter solstice sunrise at the chartaqi of Nevis. Ghiasabadi, C*hartaqi-ha-i-Iran*, 46.

Fig. 2.15. Spring equinox sunrise at the chartaqi of Nevis. Ghiasabadi, C*hartaqi-ha-i-Iran*, 45.

Fig. 2.16. Summer solstice sunrise at the chartaqi of Nevis. Ghiasabadi, C*hartaqi-ha-i-Iran*, 47.

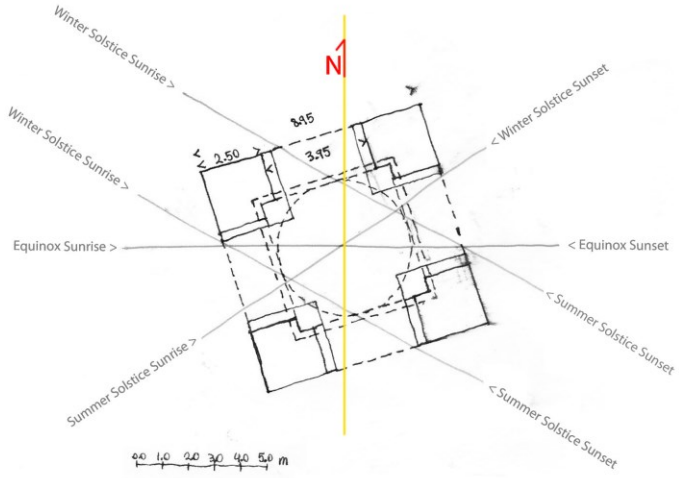

Fig. 2.17. Solstitial and equinoctial alignments in the chartaqi of Nevis. Diagram by author.

The Chartaqi of Kheyr-Abad

Latitude: 30° 31' 46.41" N

Longitude: 50° 30' 26.02" E

Elevation: 445m

Kheyr-Abad[7] is the name of a village in southwest Iran. The chartaqi of Kheyr-Abad is unique because of its location and landscape. It is built less than 100m from a river called Zohreh. There is a contemporaneous bridge in the main axis of this chartaqi, which follows the winter solstice sunrise orientation. This location is on the ancient Shahi road – a royal road dating back to the Achaemenids which connected Persepolis and Pasargad to Susa, Babylonia, and other important cities in the west. The bridge is probably a Parthian or Sassanid bridge reconstructed on the site of a more ancient road. Interestingly, there is another bridge built by the Safavids 250m to the north of this bridge,[8] of which two parts survive, one on each side of the river, showing that this road was still an important route until the eighteenth century (figs. 2.18–2.23).

[7] The name Kheyr-Abad seems to be a derived from an ancient name. In my opinion, the word *kheyr*, which means "blessing" in Arabic, is not the true origin of this name. Instead, I believe it may represent the Pahlavi *khowar*, which means "sun." The word *Khowar-Abad* or *Khowar-Abat* was a name for the temples of the sun. This name later became *Kharabat* in Persian poetry, for example in the work of the fourteenth century Persian Poet Hafiz, to describe a Magian worship place or a pagan temple. The closest word used in the late Persian language is *Mehr-Abad*, which originally referred to a temple of Mehr or Mithra, an Iranian deiety about which I will elaborate below. In the late Persian language the name Mehr was also used to address the sun; while this deity was not originally really a solar deity it has a complicated affinity with the sun. The name *Mehr-Abad* is preserved in Islamic architecture in the form of the "Mehrab," which refers to the most important part of a mosque: a small decorative arch showing the orientation of daily prayers in the mosque towards Mecca. Another chartaqi which will be discussed below is called Khowr-Abad. It is possible that that the people used to call both of these structures "Khowar-Abad."

[8] The Safavid bridge is built in another location, possibly because of the engineering considerations of the span of the bridge, and does not follow the winter solstice orientation. This suggests that the winter solstice orientation of the road passing along the axis of this chartaqi was more important than the engineering difficulties of constructing the first bridge.

Fig. 2.18. The chartaqi of Kheyr-Abad, winter 2001. Photograph by author.

Fig. 2.19. The chartaqi of Kheyr-Abad. Cultural Heritage News Agency website (chn.ir), untitled photograph.

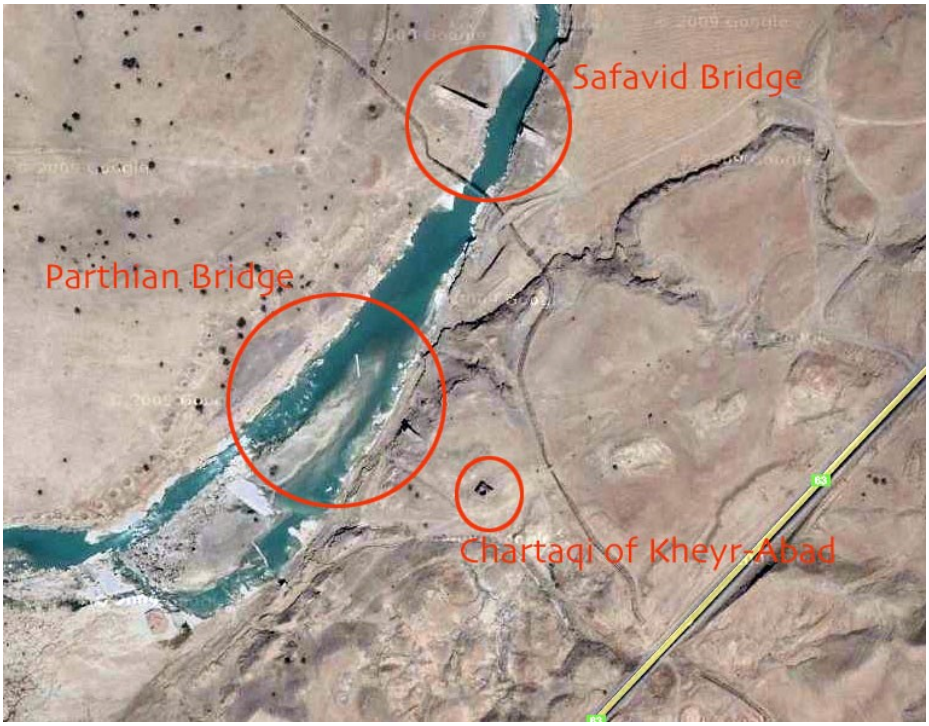

Fig. 2.20. Satellite image showing the chartaqi of Kheyr-Abad, the ruins of the Parthian bridge and the ruins of the Safavid bridge. Modified from Google Earth, "Kheyr-Abad."

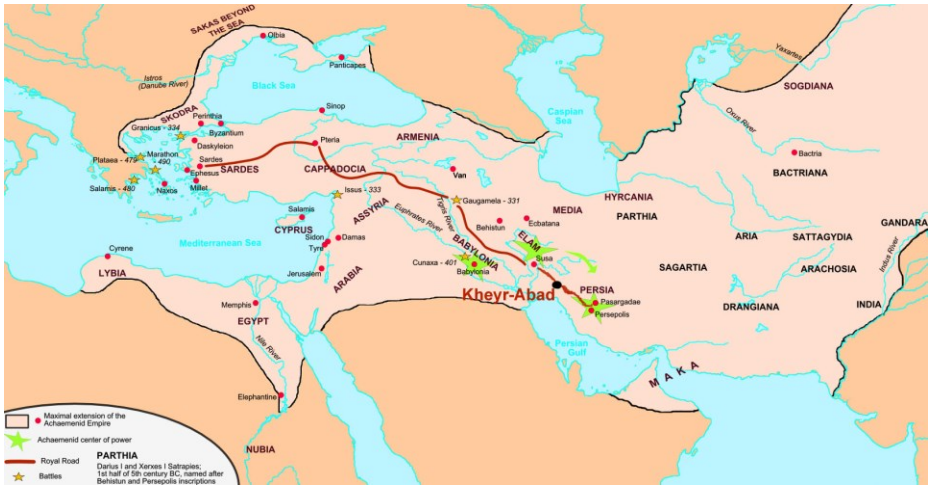

Fig. 2.21. Rah-i-Shahi (Royal Road) used to be one of the most important routes in the world in the time after the Achaemenids. The chartaqi of Kheyr-Abad is located on this road. Modified from Wikimedia, "Carte empire achéménide."

Fig. 2.22. The ruins of the chartaqi of Kheyr-Abad (on the right) and the surviving arch of the Parthian bridge on the solstitial axis of the chartaqi. Wikipedia, "ChaharTaqi-KheirAbad-9."

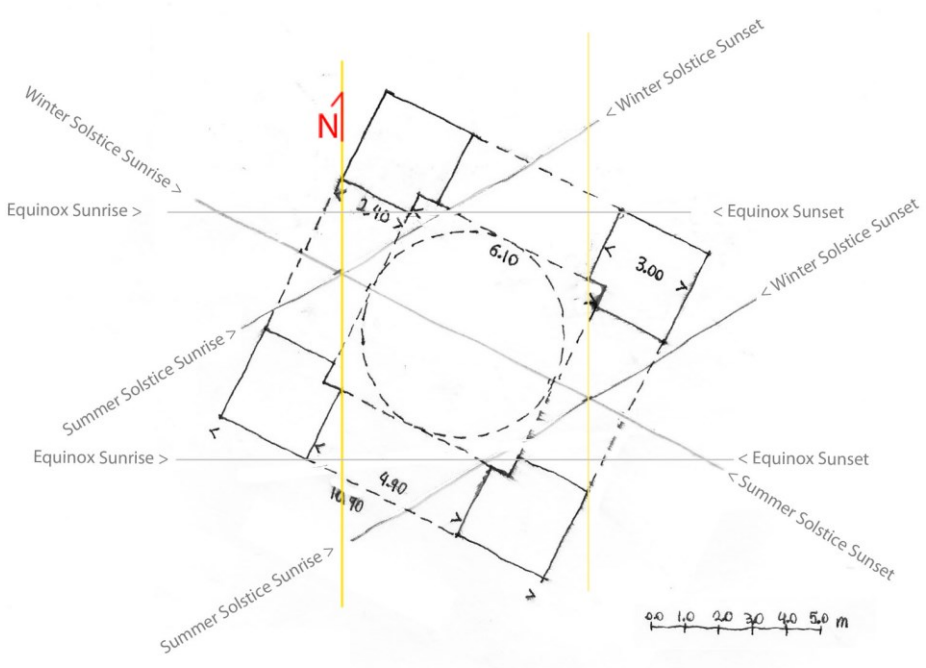

Fig. 2.23. Solstitial and equinoctial alignments in the chartaqi of Kheyr-Abad. Diagram by author.

Khaneh-i-Div

Latitude: 36° 20' 34.19" N

Longitude: 57° 20' 55.27" E

Elevation: 1,615m

This structure is believed to be another chartaqi and is located in the northeast of Iran. The ruins of this chartaqi are in a remote place in the mountains on top of a cliff. The name Khaneh-i-Div was probably given fairly recently by the local people and means "the house of the monster," because of the unusual location of this huge structure. This peculiarity helps to understand the architectural concept and the function of the chartaqi, which in this case is obviously not located in an accessible place but in a better location for equinoctial and solstitial sunrise alignments in the mountainous skyline (figs. 2.24–2.26).

Fig. 2.24. Khaneh-i-Div is a chartaqi located in northwest Iran. Google Maps: Panoramio, "Khaneh-i-Div."

Fig. 2.25. Winter solstice sunrise in the ruins of Khaneh-i-Div. Ghiasabadi, C*hartaqi-ha-i-Iran*, 72.

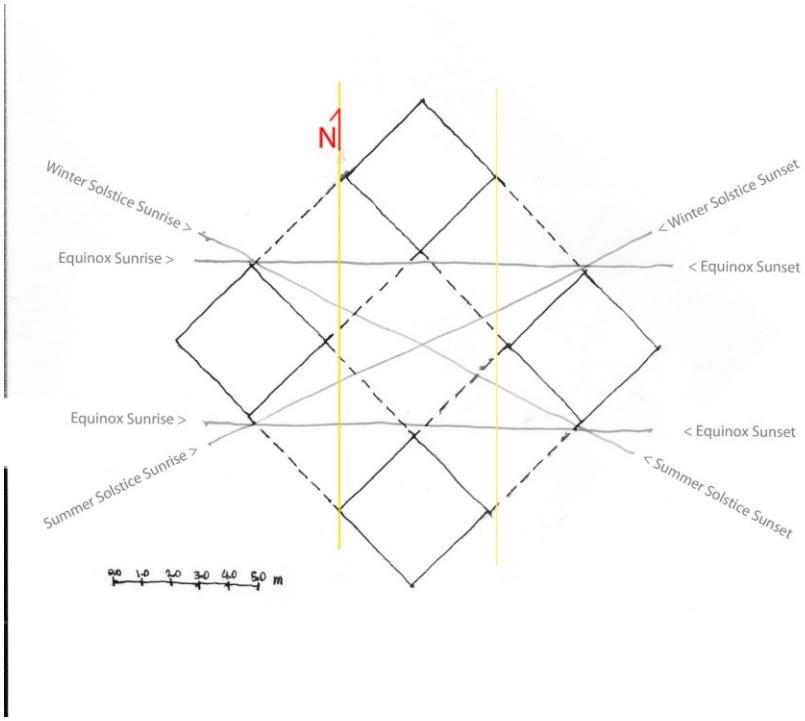

Fig. 2.26. Solstitial and equinoctial alignments in Khaneh-i-Div. Diagram by author.

The Chartaqi of Kermejegan

Latitude: 34° 17 '54" N

Longitude: 50° 49' 59" E

Elevation: 2,020m

What remains from this structure are the ruins of two pillars of a four-arch structure. The plan of this structure can be reconstructed based on a symmetrical projection of the two pillars. Ghiasabadi believes that these are the remains of a chartaqi and that its main axis follows the equinoctial orientation[9] (figs. 2.27, 2.28).

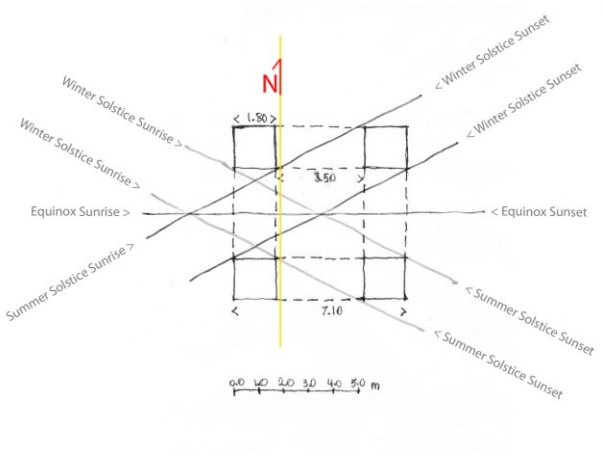

Fig. 2.27. Solstitial and equinoctial alignments in the chartaqi of Kermejegan, based on the reconstruction of the plan from the remnants of two pillars. Diagram by author.

[9] Ghiasabadi, *Chartaqi-ha-i-Iran*, 63.

Fig. 2.28. The surviving part of the chartaqi of Khowr-Abad is the lower part of a pillar. Ghiasabadi, C*hartaqi-ha-i-Iran*, 64.

The Chartaqi of Khowr-Abad

Latitude: 34° 30' 38.94" N

Longitude: 50° 57' 27.47" E

Elevation: 2,020m

What remains from the chartaqi of Khowr-Abad[10] is only a part of one of the pillars and the footprints of the other pillars, according to Ghiasabadi. Ghiasabadi reconstructed the plan of this chartaqi and demonstrated the astronomical alignment of this structure (fig. 2.29).

[10] The name Khowr-Abad, as discussed in fn 7, supports the idea that this name was assigned to this place after an ancient name for the function of this chartaqi.

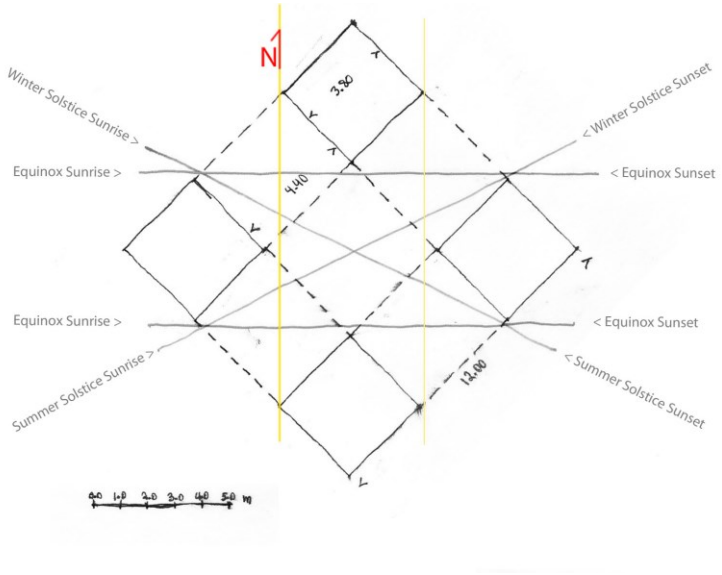

Fig. 2.29. Solstitial and equinoctial alignments in the chartaqi of Khowr-Abad, based on the reconstruction of the plan from the remnants of one pillar and the foundation of the other pillars. Diagram by author.

2.3 Chartaqi in Iranian Cosmology: From Persia to Rome

Ghiasabadi introduces twenty-five chartaqi in his work on Iranian chartaqi,[11] but the archaeological work on all of these still needs further documentation. However, the important discovery of the astronomical alignments in chartaqi opened a horizon for new investigations in different disciplines, including Architecture. Ghiasabadi's discovery is of particular interest to Archaeoastronomy. His investigation, which is mainly based on observation and fieldwork, creates a foundation for a theoretical study of chartaqi, aiming to discover the architectural concepts inherent in this important prototype of Iranian architecture.

My dissertation investigates the architectural concepts implicit in the geometry of chartaqi, with a connected approach encompassing the cosmology behind it. Architecture should not be

[11] Ghiasabadi, *Chartaqi-ha-i-Iran*.

reduced in meaning to a technique to build shelters. In fact, it is a serious effort of human beings over generations towards an attentive experiencing of the world, accomplished through dwelling in a place and developing an awareness of their location on the earth. It is a way to manifest and inscribe the human presence in space and time by building on the earth and under the heavens. The geometry of architecture, as the alphabet of this inscription, should not have been speculated other than the man's abstract perception of his surrounding landscape, including the sky. Thus on the one hand architecture is in close relationship to human beings, their bodily perceptions and their behavior, and on the other hand human beings are inspired by and limited to their environment and landscape. If architecture is not just the absolute reflection of the human abstract perception of nature, it is at least a mediator between human beings and nature, or in broader sense a mediator between human beings and the cosmos.

Attempts to reflect the intrinsic connection between human beings and the cosmos can be traced back to early human cultures, and appeared, either explicitly or symbolically, in ancient myths and graphics. Nature and the perceivable world of human beings formed the essence of their historical and cultural identity. As part of the cultural treasure of human history on the land, ancient architecture cannot be studied independently from the beliefs, myths, and rituals of human beings and their perception of the landscape and the cosmos.

Chartaqi reflect the cosmic order, aligning with astronomical references. The intelligible form of the chartaqi has embedded in it the most fundamental and perpetual symbols and cosmic patterns: square, circle, cross, symmetry, harmony, and verticality. Within its simple form, the chartaqi conveys profound concepts of the mythical world. For example, there is a significant meaning for squaring the circle, which among architecture historians is often explained as a

metaphorical reconstruction or reconciliation of the earth and the heavens, of quantity and quality, of the four elements, the four seasons, and the four directions. The four pillars and the anatomical proportions of the chartaqi show how concisely this form puts together traditional symbols. Although this in itself is enough to make the chartaqi a powerful instance of the integration of primordial divine forms by human beings, a further element of importance in the study of the chartaqi is the incredible integrity of this form with its landscape: a landscape which brings the solstice and equinox sunrise/sunset orientation between the edges of its four pillars and into the center of the circle and the square. Apparently this quadrupedal structure connects the earth to the sky by its meaningful orientation towards cosmic references.

The Iranian cross significantly appears in tombs of Achaemenid kings in Persepolis and Naghsh-e-Rostam. In these tombs a funeral chamber was built in the center of huge crosses carved on rocks (fig. 2.30). In Naghsh-e-Rostam there is another building, commonly called Kabe-Zartosht, in a site in which four of the cross-form tombs face the structure (fig. 2.31). In the design of the façade there are four square stones on each side that proportionally form the negative geometry of the crosses. The original name and function of this building is also unknown.

Fig. 2.30. The tombs of Achaemenid kings in Naghsh-e-Rostam. Photograph by author.

Fig. 2.31. Kaba-Zartosht: A structure in front of the Achaemenid tombs in Naghsh-e-Rostam. Photograph by author.

The cross, also represented in the quadrifrons geometry of the chartaqi, is commonly known as a Mithraic pattern in Iranian architecture. Cosmology is an important part of ancient Iranian mythology, but it is almost forgotten in the study of ancient Iranian texts. Mithra, or *Mehr* in modern Persian, is an ancient deity in the Avesta whose seat is in the sky. He is the final savior

who will help people to overcome evil and enemies who are breaking treaties and disturbing the peace. The word *mehr* also represents the sun, but the deity was originally differentiated from the sun in the Avesta. The month after the fall equinox in the Persian calendar is named after this deity.

It is possible that the chartaqi are built according to a more ancient cosmology that incorporates the symbol of the cross in architecture, which appeared even before the Parthians, as in Achaemenid structures. In the chartaqi a dome is also introduced as the building system in the Parthian era, which experimented with dome structures for the first time. Yet the geometry of the chartaqi reflects the same fundamental symbolic elements represented by the Achaemenids.

The civilization of the Indus valley, Iranian plateau, and Mesopotamia probably had cultural encounters with the western civilizations at least by means of trade routes, but the cultural encounters increased in the Hellenistic era and following this era the transmission of ideas resulted in the emergence of new ideological concepts. This is the time when mystery cults such as the cults of Isis and Mithras appear among the Romans. Mithra is also a divinity in Indic culture in the Vedic texts, and was also known among other civilizations. Information on Mithra in Iran is scanty, except in the Yashts of the Avesta, in a part that is believed to preserve pre-Zoroastrian myths. Mithra migrated to the west and Mithraism flourished in the first century in a completely different form among the Romans as a secret cult. The Romans called the cult "the Mysteries of the Persians." Finding the origins of this Roman form of Mithra has been a controversial subject among twentieth century scholars. If we accept that the Romans borrowed mythological elements from Iranian cosmology, they could also have borrowed concepts and symbols of Iranian cosmology. These speculations encouraged me to search for a possible

counterpart to the chartaqi in the Roman world, particularly in sites associated with Roman Mithraism.

In my research I studied a structure contemporaneous to the chartaqi by the Danube River in Austria in the archaeological city of Carnuntum: a Roman army camp and an important Mithraic heritage site. The building is a four-arch structure called Heidentor or "Pagan Gate." After preliminary studies I traveled to Carnuntum to confirm my speculations about this structure as a Roman counterpart to Iranian chartaqi. The results of my analysis of this structure show the existence of similar astronomical alignments to the chartaqi. I essentially owe this discovery to the help of Professor Ricardo Castro, who believed this structure may have many similarities to Iranian chartaqi.

Heidentor or Pagan Gate (Austria)

Latitude: 48° 6' 12.80" N
Longitude: 16° 51' 14.26" E
Elevation: 150m
Eastern horizon inclination: ~ 0˚

The quadrifrons of the Heidentor stand on four massive square pillars, which were connected by cross vaults. The area of the Heidentor was 16.2m by 16.2 m, and the 4.35m wide pillars stood at a distance of 5.83m apart. They extended beyond the vault area and wore a horizontal entablature above the parapet. The foundations, which have been fully excavated, can be seen to be in exact alignment with a rectangular plan.

The historical context and function of the Heidentor has not been satisfactorily explained. Earlier classifications hypothesized that it functioned as a city gate or a kind of street gate which spanned an intersection, or as a grave monument or triumphal arch for a historically significant gathering of Roman emperors in the year 308 AD. However, these suggestions have had to be discarded. I think the best suggestion is from the Hungarian archaeologist Sándor Soproni, who thought the Heidentor was a monument "of strictly cultic and symbolic nature."[12]

Presumably, the monument stood on a busy road junction in the city of Carnuntum, but the presence of the central figure suggests another function for this structure on the crossroad.[13] The monument is located on a slightly higher terrace at the intersection of two roads, one of which linked the Limes Road to the Amber Road. The site was obviously chosen for topographical and urban reasons. The intersection of the quadrifrons is precisely aligned to the cardinal directions.

The structure was built in the time of the Christian Emperor Constantine II (Constantine was probably influenced by Arianism).[14] The current name, meaning "pagan gate," was probably attributed in medieval times and it is possible that the early Christians identified this structure with a pagan tradition. I do not intend to connect this building directly to the Mithraic cult, but taking into consideration that Mithraism was well-known among the elite in Carnuntum and that architectural concepts can preserve and reflect a tradition, it is not difficult to imagine that its architects were aware of an architectural tradition that stemmed from a complex cosmology related to a mystery cult with Persian origins.[15] Later I will also argue that the Mithraic

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[12] Sándor Soproni, "Das Heidentor von Carnuntum," *Folia Archeologica* 29 (1978): 125–32.

[13] Werner Jobst, ed., *Das Heidentor von Carnuntum. Ein Führer* (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2002), 6–10, 53–54.

[14] Arianism is an early form of Christianity based on the teachings of the Alexandrian priest Arius.

[15] Another fact that I think might be also important is the distance of this structure from the city and its placement in a region of the Danube valley that has a constant wind (fig. 2.39). The existence of a modern wind

cosmology passed to Christian theology in many ways. But first let us see the archaeoastronomical analysis of this structure.

The structure is built on the cardinal directions, which in its flat horizon makes the east and west the precise equinoctial points. I calculated the observation angles through the pillars according to archaeological measurements and discovered that the proportions of the pillars are built to precisely follow the solstitial orientations (figs. 2.34, 2.35). The ancient Roman road passes next to the Heidentor and apparently the current gravel road in the farmlands follows the footprints of the ancient Roman road connecting to the city of Carnuntum (figs. 2.36, 2.37). This road also follows the winter solstice sunrise orientation. While the Heidentor is built according to the cardinal orientations, the solstitial orientations are considered in the observation angles through pillars. This suggests that the Roman road was also planned according to the solstitial orientation.[16]

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farm in this region is obvious proof for this fact. On my first visit to the chartaqi of Kheyr-Abad in the year 2000, one of the first things I noticed when studying a four-arch structure open on four sides was the consideration of the wind as a factor in the planning of these structures. In Iranian Mithraic and Zurvanite cosmology a deity called Vad plays an important role and is represented by the wind. I will elaborate on this mythology below.

[16] The concept of a road aligned with the solstitial orientation and connected to this type of four-arch structure is very close to what I mentioned above about the chartaqi of Kheyr-Abad in Iran. The proximity to a river is another similarity between these two sites.

Fig. 2.32. Heidentor (Pagan Gate) at the archaeological site of Carnuntum, Austria. View from east. Photograph by author.

Fig. 2.33. Heidentor (Pagan Gate) in the archaeological site of Carnuntum, Austria. View from southwest. Photograph by author.

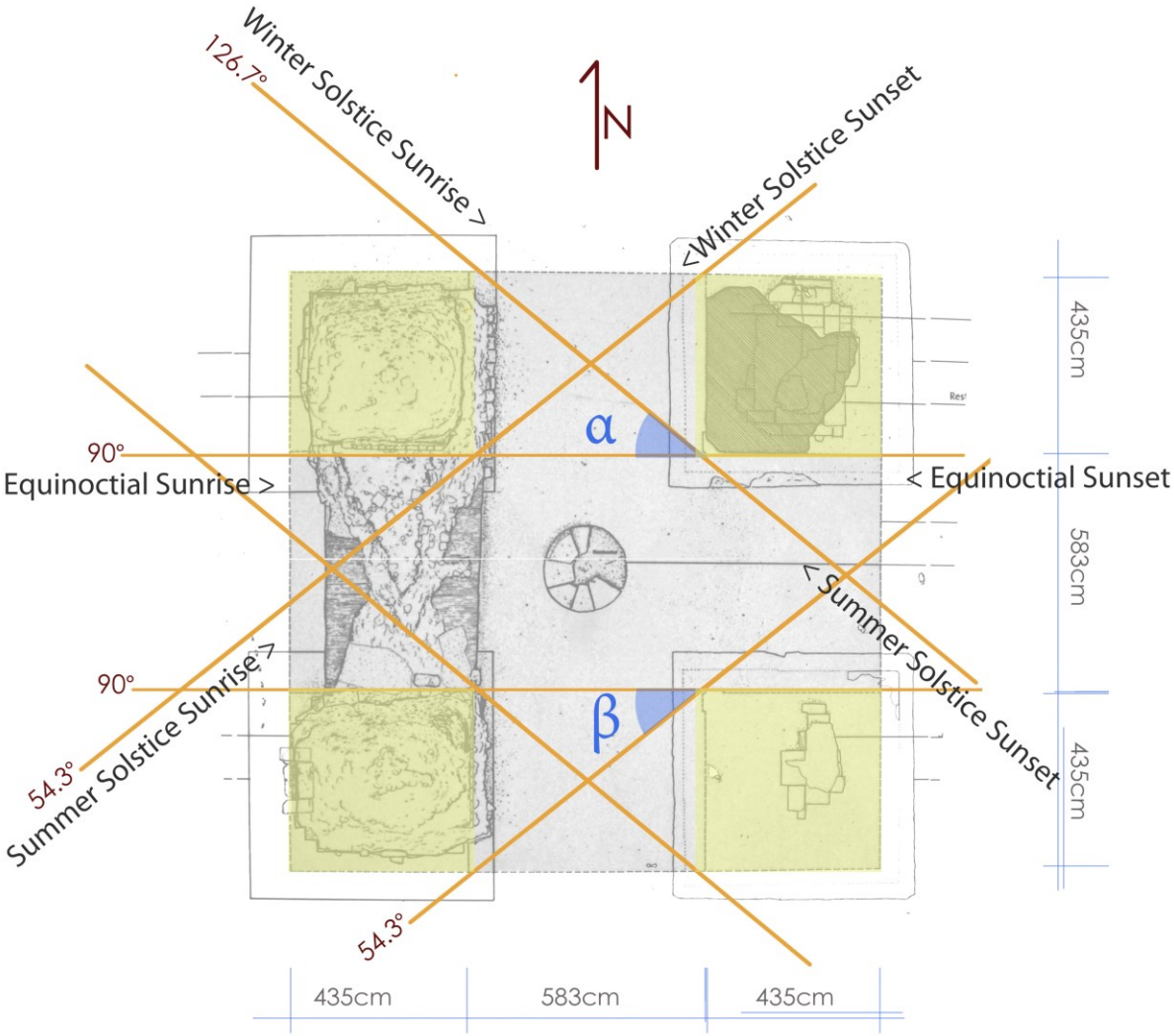

Fig. 2.34. Solstitial and equinoctial alignments in Heidentor. Diagram by author.

Fig. 2.35. Solstitial alignments in the site of Heidentor. The Roman road from the Roman city of Carnuntum passing Heidentor is aligned with the winter solstice sunrise (summer solstice sunset) solstitial alignment. Modified from Google Maps, “Heidentor.”

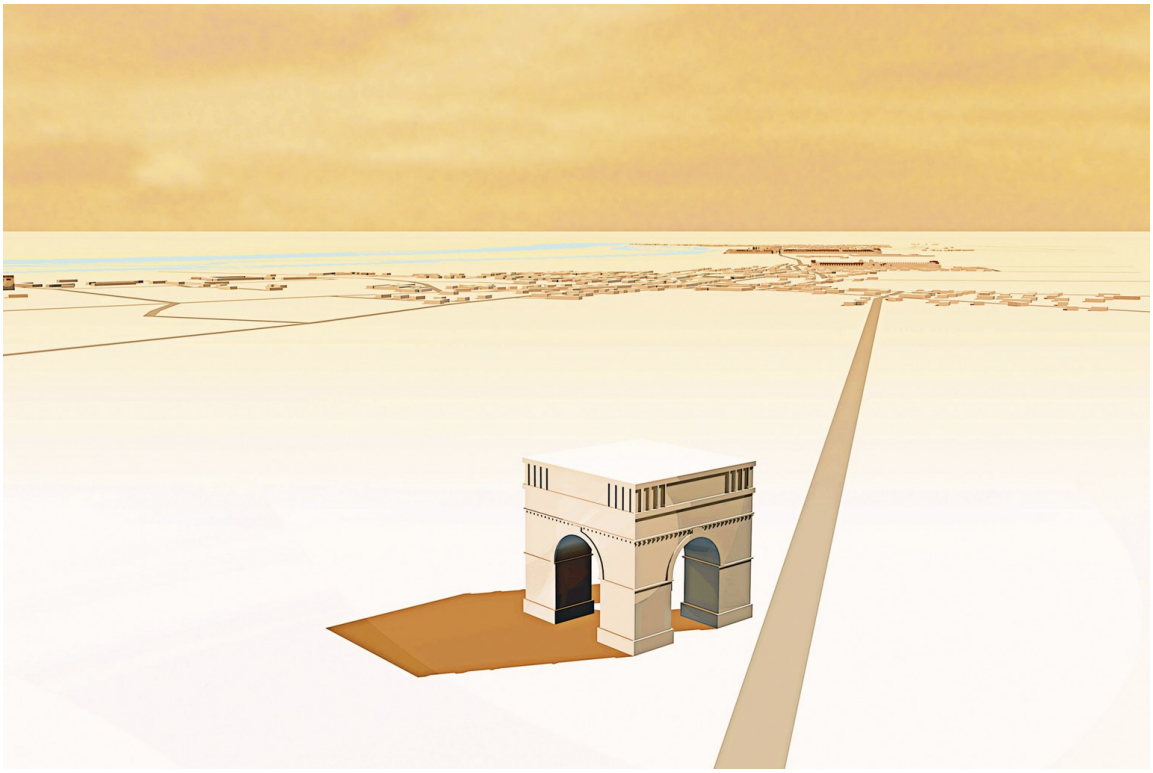

Fig. 2.36. Digital 3D reconstruction of Heidentor showing the Roman road, the city of Carnuntum, and the Danube river. Image courtesy of the Archaeological Park of Petronnell-Carnuntum.

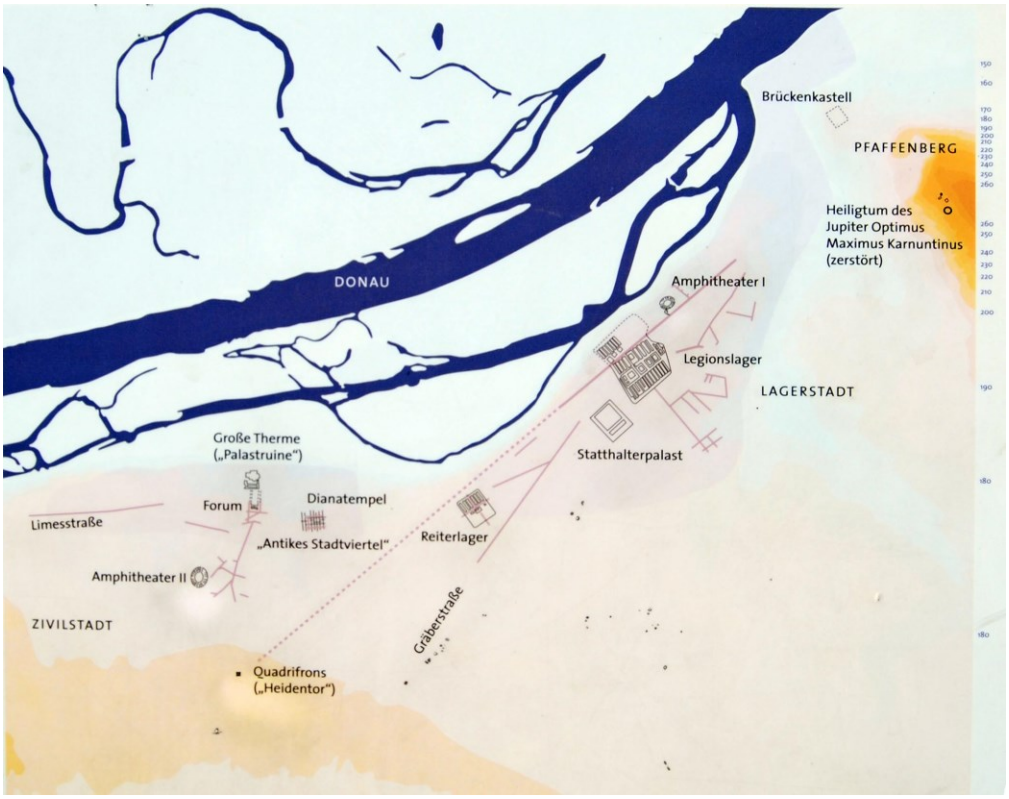

Fig. 2.37. Important Roman structures of the city of Carnuntum. Heidentor is located on the Roman road crossing the city (possibly forming the Decumanus axis) in straight solstitial alignment. Image courtesy of the Archaeological Park of Petronnell-Carnuntum.

In September 2012 I met Sepp Rothwangl, an archaeoastronomer from Austria, and discussed this issue with him. He had noticed another phenomenon. He was studying a type of small chapel or wayside shrine, significantly having a red cross (or often a white cross) as part of a typical design called Red Crosses (*Rotes Kreuz* in German). While studying Teufelstein, another archaeological site in Austria, Rothwangl had noticed that two of these shrines, kilometers away from Carnuntum, are perfectly located on the solstitial orientation together with the Heidentor (fig. 2.38). The coordinates of these crosses are: Red Cross (201, near Loretto): 016° 29' 40" East; 47° 55' 02" North; and North White Cross (near Sarasdorf): 016° 41' 20" East; 48° 01' 13" North.

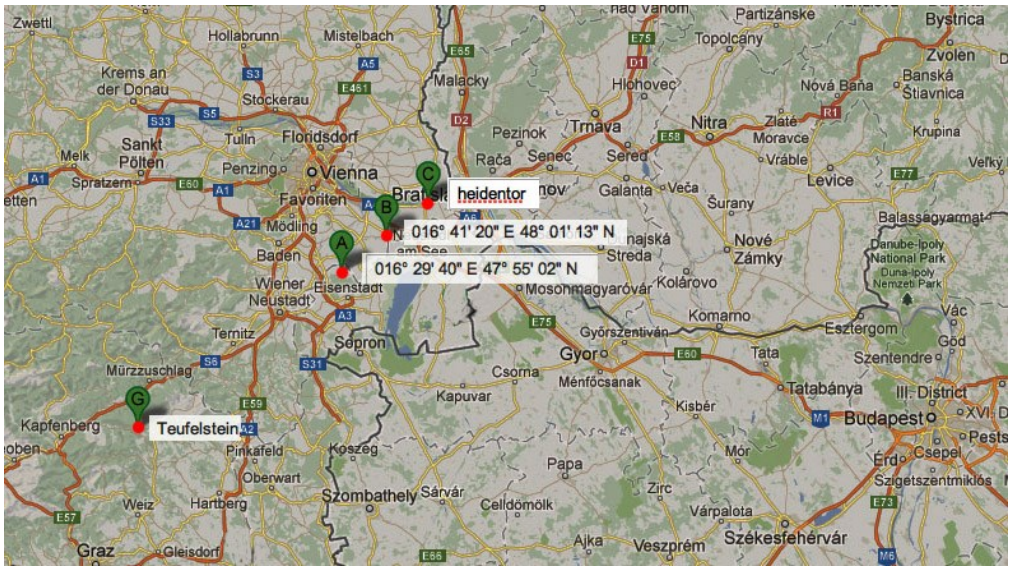

Fig. 2.38. Solstitial alignment of Heidentor with Teufelstein and two crosses in Austria. Modified from Google Maps, “Heidentor.”

Fig. 2.39. The construction of a modern wind farm in this location confirms that the wind is an important characteristic of this site, on which this structure with four open arches was constructed. Google Maps: Panoramio, “Petronell-Carnuntum.”

Arch of Janus (Rome, Italy)

Latitude: 41° 53' 21.41" N

Longitude: 12° 28' 57.28" E

Elevation: 48m

After the discovery in Carnuntum I continued examining other similar contemporaneous structures in the Roman world based on available archaeological surveys, GIS information, and solar calculation. The closest example to the Heidentor is the Arch of Janus in Rome (fig. 2.40). The Arch of Janus (*Arco di Giano* in Italian) is an ancient monument in Rome. It is a so-called quadrifrons, a four-sided structure with a square base, built of brick and Roman concrete covered with marble. In ancient Rome, the sixteen meter-high building stood in a prominent place in the area at the northern end of the Velabrum Forum Boarium. This structure was built in the fourth century. It is believed by historians that the name Janus dates from the Renaissance.[17] A comparison with the structurally similar Heidentor at Carnuntum showed that both quadrifrontes were built according to the same planning scheme.[18] The measurements show that the plan of the Arch of Janus is slightly different from a square but perfectly follows the winter solstice sunrise and the equinoctial orientations (figs. 2.41–2.44).

[17] However, even if the name of the Roman god Janus was attributed in the Renaissance only coincidentally, because of the known quadrifrons form of this mysterious time-god, the similarity is important to take into consideration when interpreting the quadrifrons geometry of this typology of structure. This is especially the case now that the astronomical alignments in this structure have been discovered and its connection with Roman cosmology and concepts of time is very possible.

[18] Erwin Reidinger, with Wilfried Greiner, Markus Jobst, and Werner Jobst, "Das Heidentor in Carnuntum und der Janus Quadrifrons in Rom – Bautechnische Analyse und Vergleich," in *Carnuntum Jahrbuch 2007*, ed. Werner Jobst (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2007), 121–74.

Fig. 2.40. Arch of Janus, Rome. Wikimedia, “Arch of Janus.”

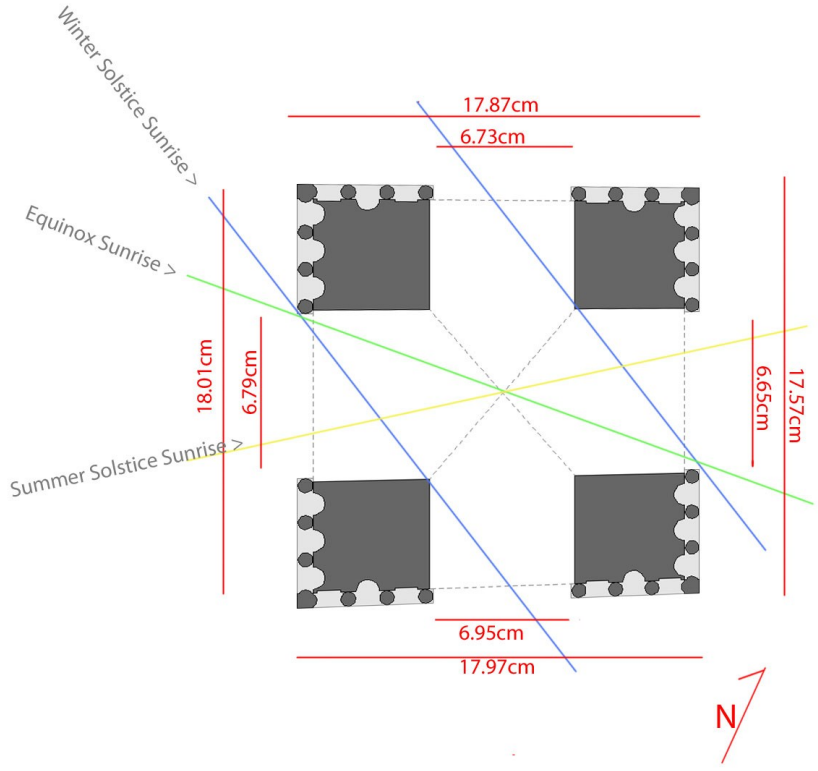

Fig. 2.41. Solstitial and equinoctial alignments in the Arch of Janus. Diagram by author.

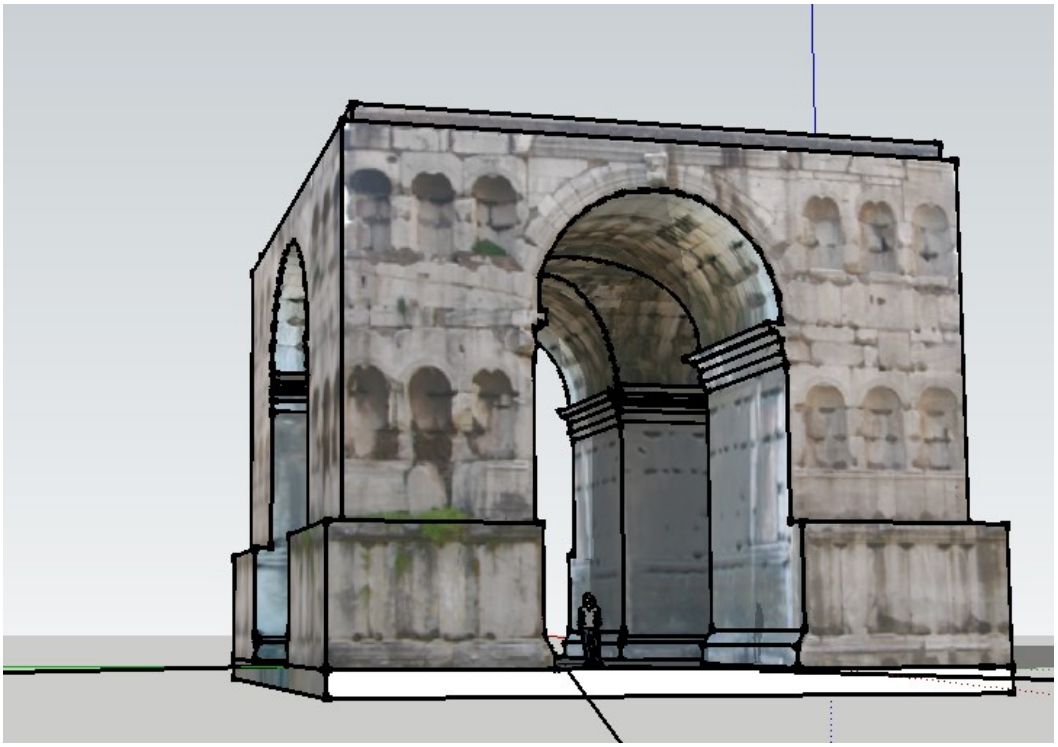

Fig. 2.42. Digital 3D reconstruction of the Arch of Janus. Diagram by author.

Fig. 2.43. Digital 3D reconstruction of the Arch of Janus. Diagram by author.

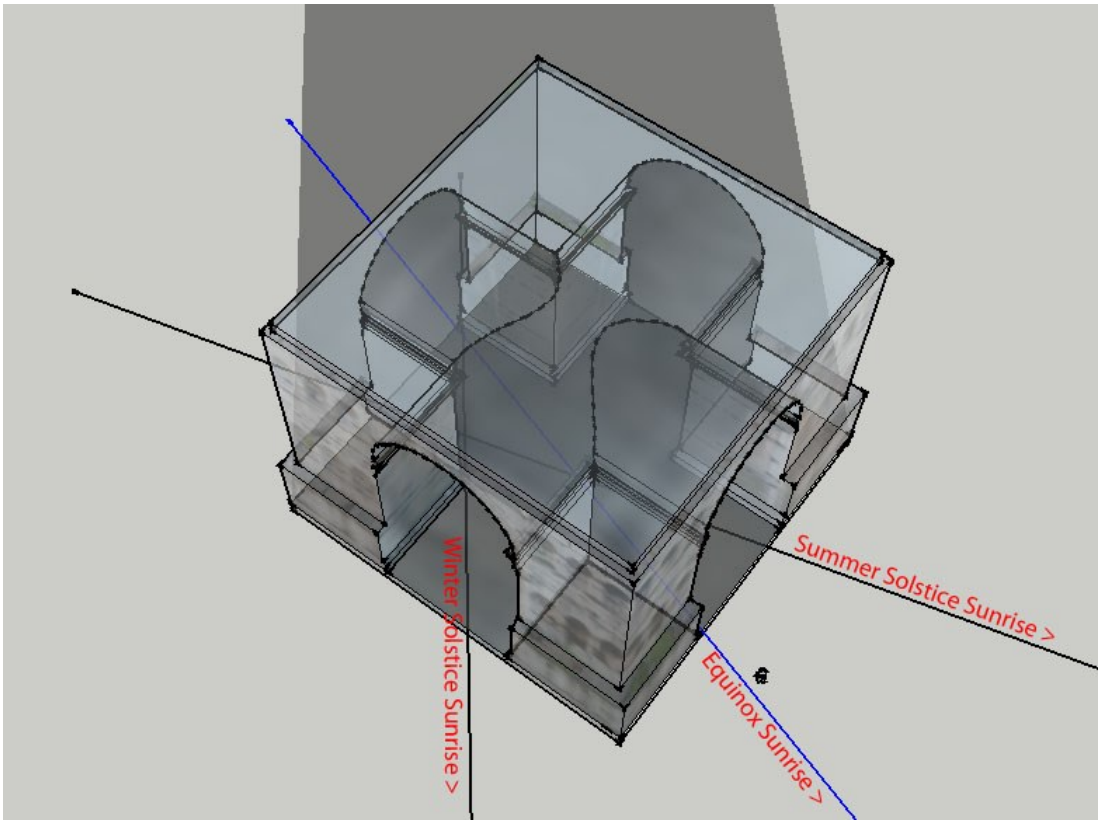

Fig. 2.44. Digital 3D reconstruction of the Arch of Janus demonstrating the astronomical alignments. Diagram by author.

Arch of Malborghetto (Italy)

Latitude: 42° 3' 8.33" N

Longitude: 12° 29' 13.50" E

Elevation: 110m

The Arch of Malborghetto, now a museum,[19] is another Roman four-arch structure located in the north of Rome. Over the centuries the structure was modified and reused for other functions, and is a massive building that at first sight resembles a medieval structure; however the Roman

[19] Ranuccio Bianchi Bandinelli and Mario Torelli, *L'arte dell'antichità classica, Etruria-Roma* (Utet: Torino 1976).

structure is distinguishable (fig. 2.45). The four-arch structure was originally built in the fourth century AD. Its current name comes from the area in which it is located, Malborghetto. It was located on the intersection of two major roads, the Via Flaminia and the Via Veientana, of which some parts remain in the area surrounding (fig. 2.46).[20] The architectural structure of the original building was that of a four-sided rectangular arch with dimensions of 14.86m by 11.87m and is assumed to be about 18m high. The masonry brick, still visible, suggests a cladding of marble slabs anchored with metal clamps, because of the existence of square holes on the exterior walls. Existence of the exterior columns on two of four sides is also suggested.

Fig. 2.45. Arch of Malborghetto. A roman four-arch structure with medieval additions. Donna Roomassa: Miettaetä, tunnelmia ja kokemuksia Roomasta, "Archaeological Sites."

[20] Gaetano Messineo, *Malborghetto* (Rome: De Luca, 1989).

Fig. 2.46. The remains of the pavements of the Roman road passing the Arch of Malborghetto. Wikipedia, "Antica via Flamina 2011."

The analysis of the archaeological plans of the Roman part of the Arch of Malborghetto reveals that this arch, like the Heidentor and the Arch of Janus, has astronomical alignments. It is perfectly aligned with the two solstitial orientations (fig. 2.47). The equinoctial alignment in the structure is considered to have 6 degrees deflection towards the north from actual cardinal east, where the local equinoctial sunrise orientation would be. This amount of difference in archaeoastronomical calculation is often ignored, and the ancient artificial skyline could have been different and/or the archaeological survey might have lacked the necessary precision. Still, considering the landscape, the most important natural landmark in the horizon is the peak of Mont Gennaro (with a height of 1,274m at a proximity of 26km to this site), visible three degrees towards the north of cardinal east from the Arch of Malborghetto, and this could be the reason for this inaccurate equinoctial alignment (fig. 2.48). The other possibility is the consideration of other important orientations such as the orientation of Via Flamina or another urban axis of the site before the construction of the structure.

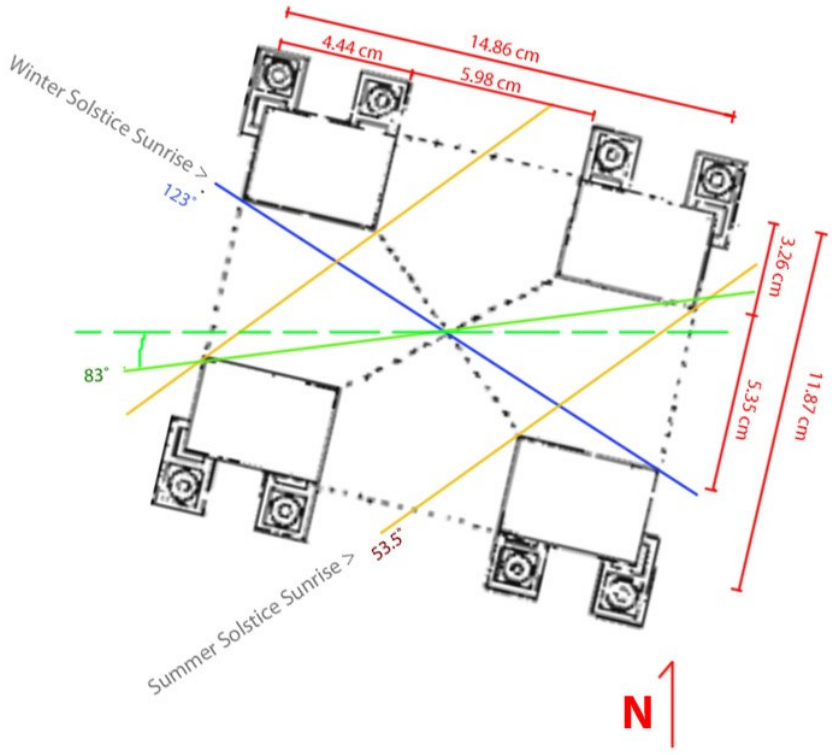

Fig. 2.47. Solstitial and equinoctial alignments of the Arch of Malborghetto. Diagram by author.

Fig. 2.48. Mont Gennaro is the highest natural element visible from the Arch of Malborghetto on the horizon at three degrees north of the east cardinal direction. Modified from Google Earth, "Mont Gennaro."

The presence of an arch on the Flaminian road in the fourth century has been ascribed to the fact that the troops of Constantine descended from the north along this road in order to oppose the troops of the Emperor Maxentius. According to Christian reports, Constantine, while camping in

this place, saw the sign of the cross in the sky at sunset and in his sleep was warned to mark the heavenly sign of God on the shields of his army and to go into battle. The next day, October 28th 312 AD, at Saxa Rubra, Constantine routed the army of his rival, Maxentius, who perished in the waters of the Tiber. Following this victory, in 315 the Roman Senate ordered the erection of the bifrontal arch near the Colosseum in the city of Urbs and, perhaps, the erection of the four-fronted one at Malborghetto in the Suburbium.[21] This story, whether true or not, relates this site and the quadrifrons geometry of this structure with the heavenly cross sign of God in early Christianity.

The Renaissance architect Giuliano da Sangallo made the first graphic reconstruction of the original monument (fig. 2.49). Later the archaeologist Fritz Toebelmann also made a graphic reconstruction of the building (fig. 2.50). In his graphic reconstruction of this monument, Toebelmann hypothesizes a statue of a charioteer riding a quadriga on top of this structure. This suggestion recalls an image from the Arch of Nero, an earlier, probably similar Roman structure that has not survived. This arch, built in honor of the emperor Nero, was decreed by the Senate in 58 AD on the occasion of the Roman victory over the Parthians, but was actually only built in 62 AD. It was placed on the access road to the Capitol, but was probably destroyed shortly after. Depictions of this arch on coins show it to have been a single arch, with Corinthian columns above pedestals projecting from the facade and a statue of a charioteer riding a four-horse chariot accompanied by two other figures on the sides (fig. 2.51).

[21] Soprintendenza speciale per i beni archeologici di Roma, "Arco di Malborghetto," accessed August 7, 2013, http://archeoroma.beniculturali.it/siti-archeologici/arco-malborghetto.

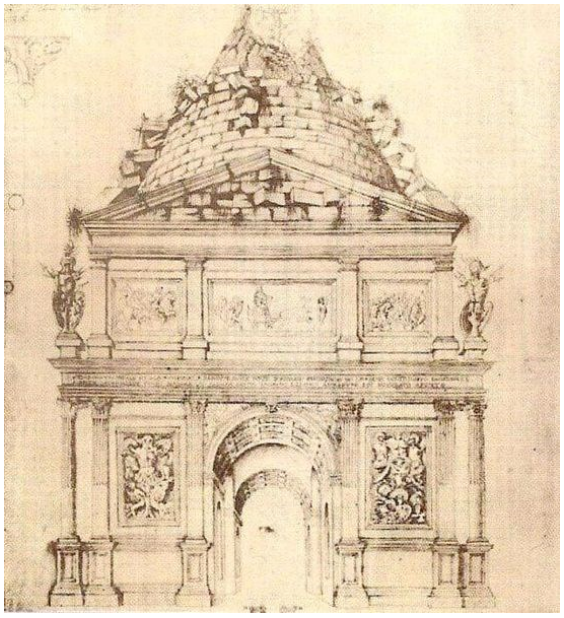

Fig. 2.49. Reconstruction of the Arch of Malborghetto by Giuliano da Sangallo. Bisanzio, “L’arco di Malborghetto.”

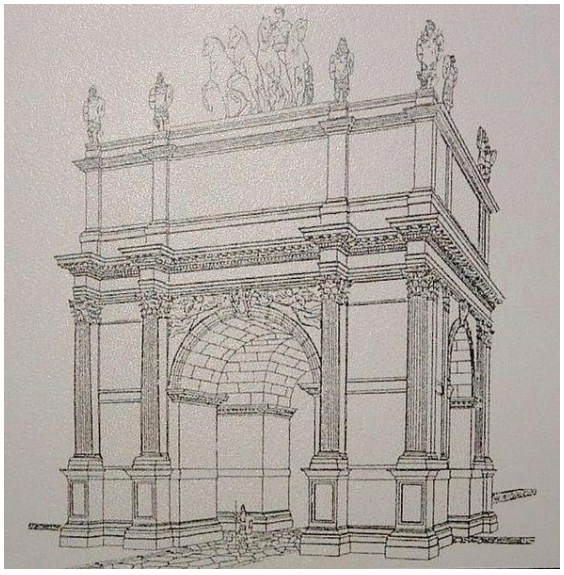

Fig. 2.50. Reconstruction of the Arch of Malborghetto by Fritz Toebelmann. Bisanzio, “L’arco di Malborghetto.”

Fig. 2.51. Roman coin showing Nero and the Arch of Nero with statue of a four-horse chariot on top. Wildwinds, "Browsing Roman Imperial Coinage of Nero."

The Romans and the two Iranian Empires, the Parthians and their Sassanid successors, were the most serious rivals in antiquity. Battles started in 92 BC and occurred several times until 629 AD, when the Arab invasions ended the power of the Sassanid and Byzantine East Roman empires, both of which were exhausted after the last catastrophic wars between them.

The wars were usually triggered by provocative and ambitious intentions on both sides to take control of border regions of Armenia and Syria. When Nero became emperor of Rome, the Iberian prince of the Roman vassal kingdom of Armenia was overthrown and replaced with Tiridates, a Parthian prince. This created a challenge for Nero to satisfy the Romans, who assumed this was a Parthian invasion of Armenia. Nero sent the military to the region and the Parthians temporarily gave up control of Armenia.[22] The peace treaty between Nero and the Parthians, which was considered a victory for Nero, did not last long and Vologases I, the Parthian king, refused the removal of his brother Tiridates from Armenia. Then the real war broke out in 58 AD. Initially the Parthians fully invaded Armenia but in the same year Tiridates

[22] Tacitus, *The Annals*, trans. Alfred John Church and William Jackson Brodribb, accessed September 2, 2014, *The Internet Classics Archive*, http://classics.mit.edu/Tacitus/annals.html), XIII.8, 9, 10.

retreated in the face of Nero's forces and the Parthian army was repelled from Armenia.[23] Nero was acclaimed for this initial victory. However, in 62 an 63 the war between the Romans and Parthians continued after the Roman invasion of the Parthian province of Adiabene, and the Parthians intended to strike against the Roman province of Syria, which led to anxiety in both Empires.[24] Nero become popular by going for another peace treaty with the Parthians, according to which Tiridates returned to Armenia but was crowned in Rome by Nero.[25]

Tiridates was crowned in Rome in 66 AD and Nero generously received him in order to increase his popularity. One of the famous and rare historical references to early Roman Mithraism is from the second and third century historian Cassius Dio, who describes the occasion of the coronation of Tiridates I in Rome by Nero in 66 AD. According to Dio Cassius, Tiridates told Nero that he revered him as Mithras.[26] The concept of Mithraism was probably well known to the Roman Emperor and the Parthian Prince, since they used the name of Mithras on the occasion of the peace agreement, although Mithraism as a popular cult might only have been established in its Roman form years later in Rome.

As a symbolic action Nero ordered the gates of the temple of Janus (not to be confused with the arch of Janus) to be shut, declaring that the time of peace had returned to the Roman Empire.[27] Janus or Ianus was the god of time, the god of gates, god of beginnings, passages, and ends. January, the first month following the winter solstice, is also named after him. Janus was the two-faced god who stood in passages and looked towards the east and west. The Gate of Janus

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[23] Tacitus, *Annals*, XIII.42, 46, 55.
[24] Tacitus, *Annals* XV.1, 4.
[25] Tacitus, *Annals* XV.29. Based on this treaty, peace between Parthia and Rome lasted 50 years until another Roman invasion of Armenia in 114 in the time of the Emperor Trajan.
[26] Cassius Dio, "Roman History," *Bill Thayer's Website*, accessed September 18, 2014, http://penelope.uchicago.edu/Thayer/E/Roman/Texts/Cassius_Dio/home.html, 63.5.2.
[27] David Shotter, *Nero*, 2nd ed. (London and New York: Routledge, 2005), 39.

was reported to have doors which were opened in times of war and closed in times of peace.[28] There is a coin of Nero, probably struck in celebration of this occasion, showing the temple of Janus with closed gates (fig. 2.52). While the name "Arch of Janus" has been argued to be a Renaissance attribution, the earlier architectural models suggest that the concept of quadrifrons arches, often believed to be triumphal arches, also related in a way to the god Janus. Thus the name, even if a Renaissance invention, is possibly not just a coincidence.

Fig. 2.52. Roman coin showing Nero and the temple of Janus with closed gates. Wildwinds, "Browsing Roman Imperial Coinage of Nero."

[28] In my opinion the symbolic action of the closure of the gates of the temple of Janus was in order to trap the time of peace in the temple (since Janus represented the concept of eternal time.)

The Arch of Cáparra (Spain)

Latitude: 40° 9' 59.81" N

Longitude: 6° 6' 3.67" W

Elevation: 402m

The Roman city of Cáparra is located in the ancient Roman province of Lusitania, in the region of the Alagon River valley in the north of Extremadura, in the Conventus Iuridicus Emeritensis. It is crossed by the Roman road called Via de la Plata, whose remains are abandoned today.

During the High Middle Ages, the city began to lose population in the abandonment following the Muslim invasion. It was repopulated after the territory was conquered by the Christian kingdoms. The Arch of Cáparra is the most important surviving building in the city. It is a four-arch structure, the only one of its type in Spain. It has a square plan with measurements of 8.6m by 7.35m, with an estimated height of 13.3m in its original state. It is situated in the center of the city, bordered by the forum and public baths and other major monuments. It is very likely that it was on the intersection of the two main Roman streets, the Cardo and the Decumanus.[29]

What is very important about this structure is the solstitial alignment of the Via de la Plata Roman road, like the Roman road in Carnuntum. More than 6km of this road extends in a straight line to pass through the arch. This arch is built on the Roman axes of city planning, the Cardo and Decumanus, which are perpendicular in Cáparra with the Decumanus purposely aligned with the solstitial orientation. The arch is designed to accommodate these city axes along with the other solstitial orientation and the equinoctial orientation (figs. 2.53–2.56). The proportion of the structure also accommodates the north-south cardinal directions in the

[29] A. García y Bellido, "El tetrapylon de Capara (Cáparra. Cáceres)," *AEspA* (1972): 45–47.

observation angles between the pillars. This perfectly designed four-arch structure shows the importance of these alignments in Roman urban design.

Fig. 2.53. The Arch of Cáparra. History de la Arquitectura en España, "Arco de Capera – Caparra, Oliva de Plasencia –."

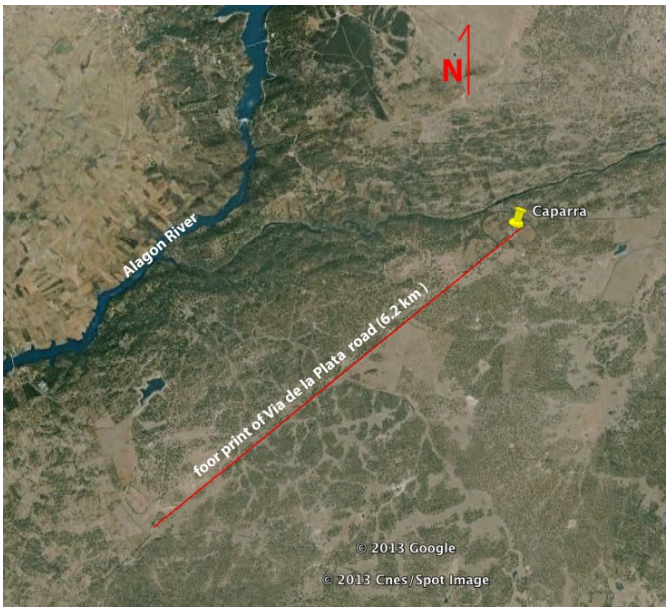

Fig. 2.54. Via de la Plata, which passes the Arch of Cáparra, has a solstitial alignment. Modified from Google Earth, "Cáparra."

Fig. 2.55. Solstitial alignments on the site of the Arch of Cáparra located on the Roman road Via de la Plata. Modified from Google Earth, "Cáparra."

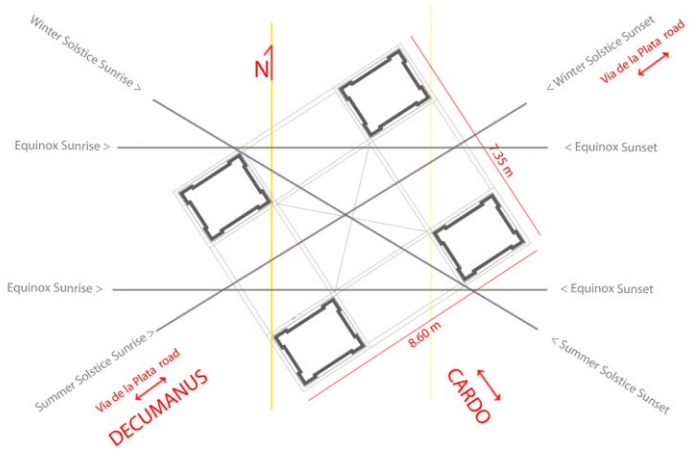

Fig. 2.56. Solstitial and equinoctial alignments of the Arch of Cáparra. Diagram by author.

Roman architecture emphasizes urban design. The ideal city for Romans seems to have a square plan through which two crossing straight streets define the positioning of other main structures in the city and dictate the alignment of the urban grid. In cities like Timgad in modern Algeria, designed by Romans from scratch, this concept is perfectly applied. These two axes are called

Cardo (usually north-south) and Decumanus (usually east-west). In the case of Cáparra, it seems that the cosmic alignment of the city is not limited to the cardinal points but also addresses the solstitial and equinoctial orientations, and the four-arch structure plays a significant role in bringing together all these alignments to fully cosmicize the Roman city. Later, I will explain why these orientations could be so important in this context.

Palmyra Tetrapylon (Syria)

Latitude: 34° 33' 5.44" N
Longitude: 38° 16' 4.94" E
Elevation: 410m
Eastern horizon inclination: 0°

Palmyra is a city located in central Syria and is known to have existed since at least the second millennium BC, as it is mentioned in the archives of Mari. The city is called *Tadmor* in Hebrew and Arabic and is mentioned in the Hebrew bible. The city became independent after the Seleucids took control of Syria in 323 BC. It became a wealthy city because of its situation on trade routes linking China, India, and Persia to the Mediterranean. In the mid-first century AD the Romans took control of Syria and Phoenicia. Palmyra became one of the richest cities of the near east and Palmyrans are believed to have owned ships in Italian waters and to have

controlled the Indian silk trade: they "manage[d] to live alongside Rome without being Romanized."[30]

The city has a Decumanus Maximus or main Decumanus street that intersects with a Cardo street. On the intersection is built a tetrapylon structure, that is, a structure with a square plan and four sets of pillars, each set made of four pillars (figs. 2.57–2.59).

Fig. 2.57. The tetrapylon in Palmyra, Syria. AtlasTours.Net, "Palmyra, Syria."

Fig. 2.58. Cardo and Decumanus colonnades and the Palmyra tetrapylon. CultureFocus.com, "Sunrise Behind the Tetrapylon at Palmyra, Syria."

[30] Terry Jones and Alan Ereira, *Terry Jones' Barbarians* (London: Ebury Press, 2006), 204.

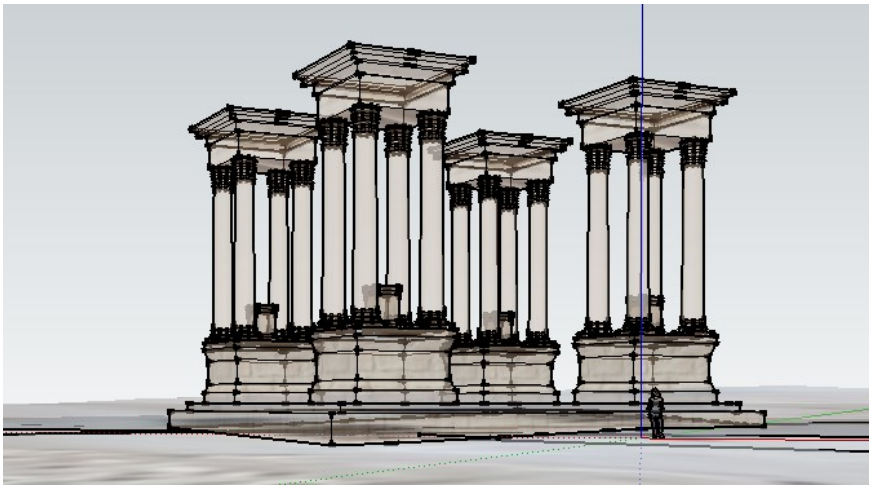

Fig. 2.59. Digital 3D reconstruction of the Palmyra tetrapylon. Diagram by author.

In Palmyra, both Cardo and Decumanus change orientation slightly after passing the intersection. These orientations, which I will call Cardo II and Decumanus II, are built on the axes of a temple in the northwest (the Temple of Bel) and another temple in the northeast. The orientation of Cardo II towards the temple of Bel[31] is perpendicular to Decumanus II, which is oriented towards the winter solstice sunrise direction. But the orientations of Cardo and Decumanus on the other side of the intersection, which I call here Cardo I and Decumanus I, are not perpendicular and are situated exactly according to the solstitial alignments. The tetrapylon here is constructed according to the axes of Decumanus II, which points towards one of the temples. But the observation angles between the four sets of pillars also accommodate the cardinal directions and the summer sunrise (winter sunset) solstitial orientation. Furthermore, if we take into

[31] Bel was a semitic god worshiped in Palmyra in triad with the moon god Aglibo and the sun god Yarhibo. This stone temple was dedicated in the first century and was the center of religious activities in Palmyra. In the ceiling of the northern chamber of the temple there is a bas-relief of seven planets surrounded by the zodiac. See: Charles Gates, *Ancient Cities: The Archaeology of Urban Life in the Ancient Near East and Egypt, Greece and Rome* (Oxford and New York: Routledge, 2003); Ted Kaizer, *The Religious Life of Palmyra: A Study of the Social Patterns of Worship in the Roman Period* (Stuttgart: Franz Steiner Verlag, 2002); Aedeen Cremin, *Archaeologica: The World's Most Significant Sites and Cultural Treasures* (London: Frances Lincoln Ltd, 2007). The astrological iconography of the zodiac in the temple and the pantheon of Bel and is potentially comparable to Roman mithraic iconography.

consideration the four columns of each set we see that the other solstitial alignment (the winter solstice sunrise, which is the same as the summer solstice sunset here) is also perfectly considered in the design of this structure. The orientation of Cardo I, that is, the orientation of the tetrapylon towards the temple of Bel, is also considered in this way. This shows that the form of this sixteen-pillar structure was intentionally chosen and accurately designed in this way to accommodate six different orientations.

There is another bifrons arch named after Septimius Severus on Decumanus I, located 320m southeast of the tetrapylon. The winter solstice sunset could be perfectly enframed in this arch, observing through the tetrapylon along Decumanus I, which is built as a colonnade. The theater of Palmyra, which is one of the most magnificent surviving Roman theaters, is built accurately on this orientation on the south side of Decumanus I, while the buildings of the Agora and Senate, built right behind the theater, are not exactly oriented towards the solstitial direction but aligned with Cardo I. This phenomenon shows other arches planned and designed according to an astronomic order, creating a network defining the main axes of the Roman urban plan (figs. 2.60–2.65).

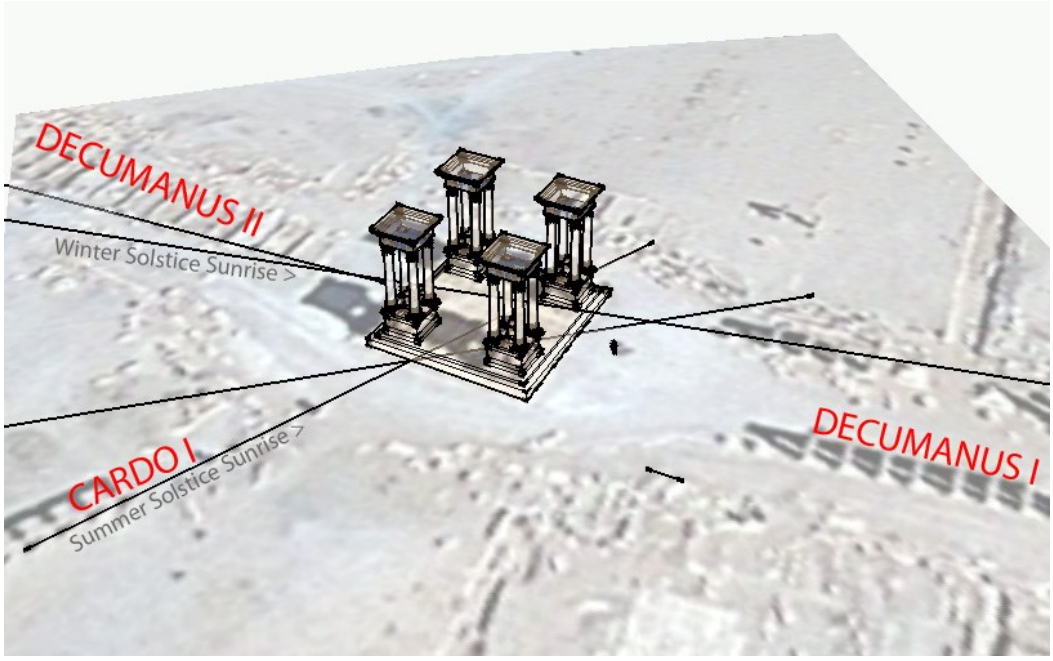

Fig. 2.60. Digital 3D reconstruction of the Palmyra tetrapylon showing the alignments of Cardo and Decumanus crossing the Palmyra tetrapylon according to satellite images. Diagram by author.

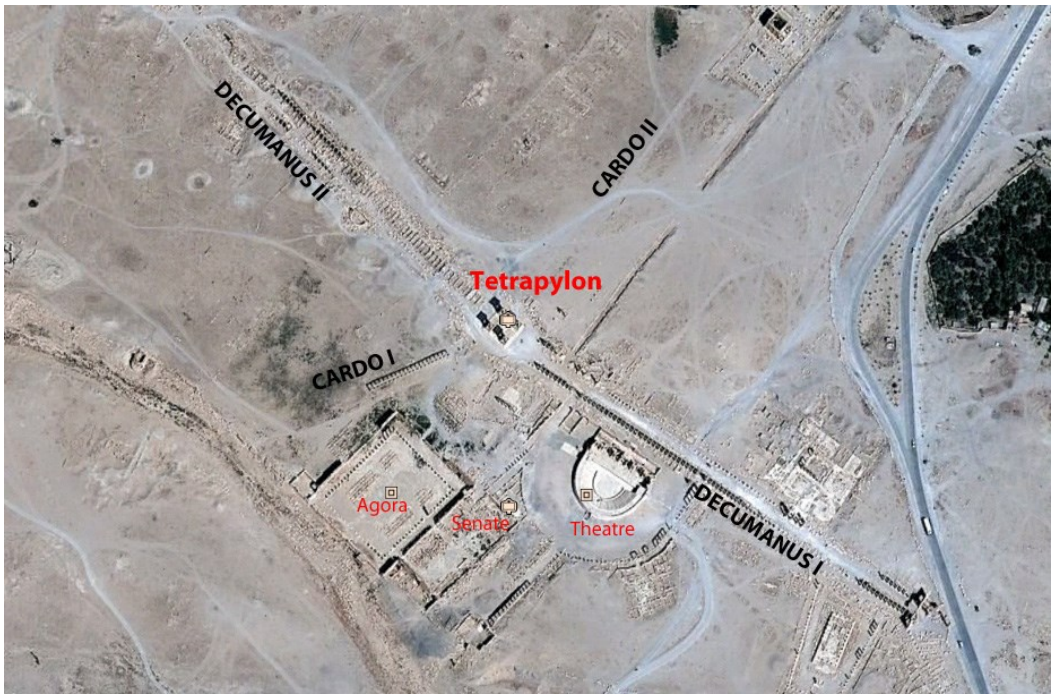

Fig. 2.61. Arrangements of the main structures in Palmyra around the tetrapylon. Modified from Google Maps, "Palmyra."

Fig. 2.62. Solstitial and equinoctial alignments and cardinal directions on the site of the Palmyra tetrapylon. Modified from Google Maps, "Palmyra."

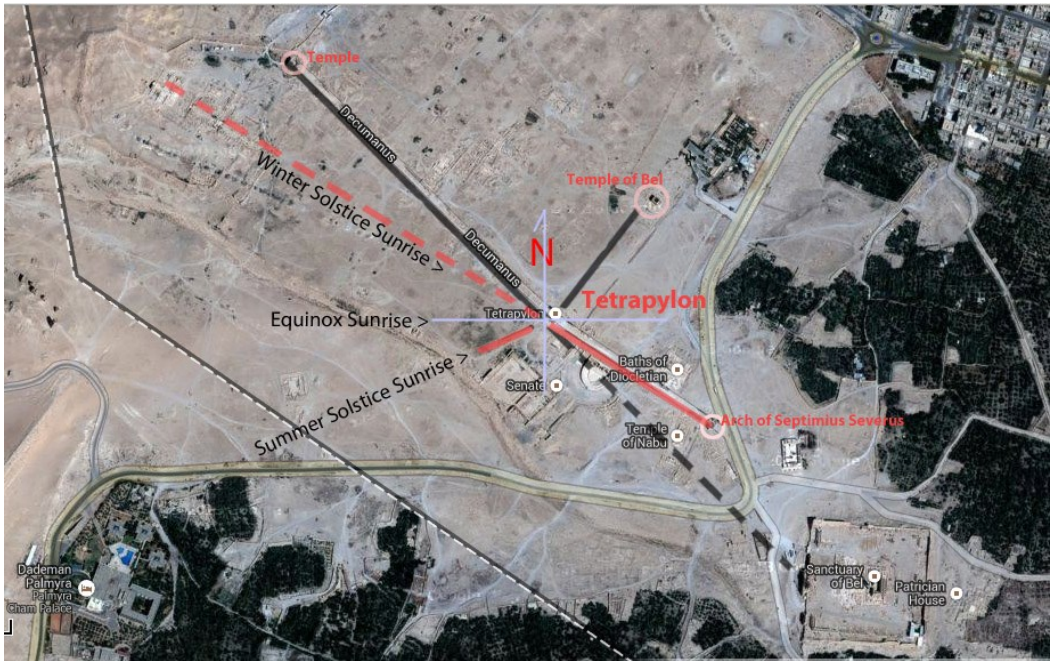

Fig. 2.63. Solstitial and equinoctial alignments and cardinal directions in Palmyra in relationship to the main streets, the temples, the tetrapylon, and the Arch of Septimius Severus. Modified from Google Maps, "Palmyra."

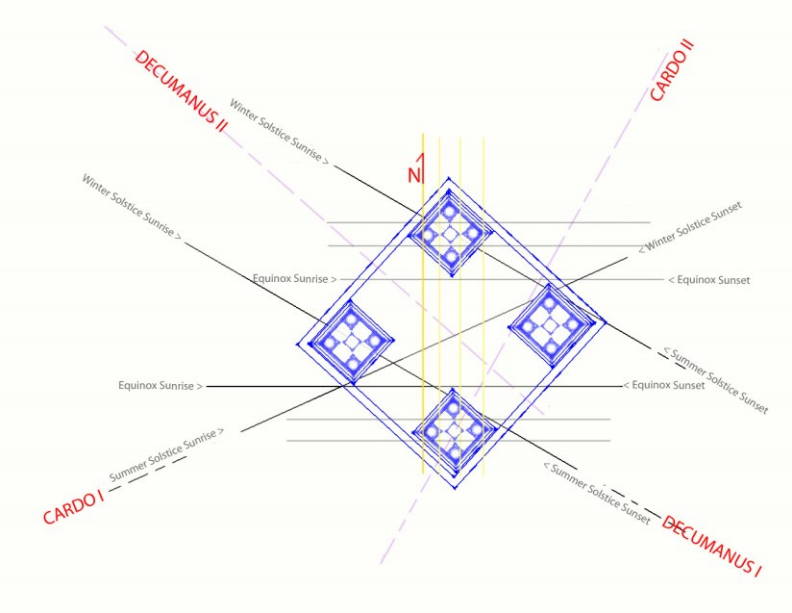

Fig. 2.64. Solstitial and equinoctial alignments of the Palmyra tetrapylon showing that the tetrapylon is also designed according to the alignment with the cardinal directions and Cardo and Decumanus. Drawing by author.

Fig. 2.65. The arch of Septimius Severus in Palmyra on Decumanus. Academic: Los diccionarios y las enciclopedias sobre el Académico, “Palmyra Monumental Arch.”

The Arch of Marcus Aurelius (Libya)

Latitude: 32° 53' 59.61" N

Longitude: 13° 10' 32.63" E

Elevation: 10m

Eastern horizon inclination: 0°

This Roman four-arch structure is close to the Mediterranean Sea and its main axis is oriented towards the winter solstice sunrise. It also perfectly designed according to the cardinal directions and solstitial and equinoctial orientation through the observation angles through the pillars (figs. 2.66–2.68).

Fig. 2.66. Arch of Marcus Aurelius, Libya. Wikipedia, “Marcus Aurelius Arch Tripoli Libya.”

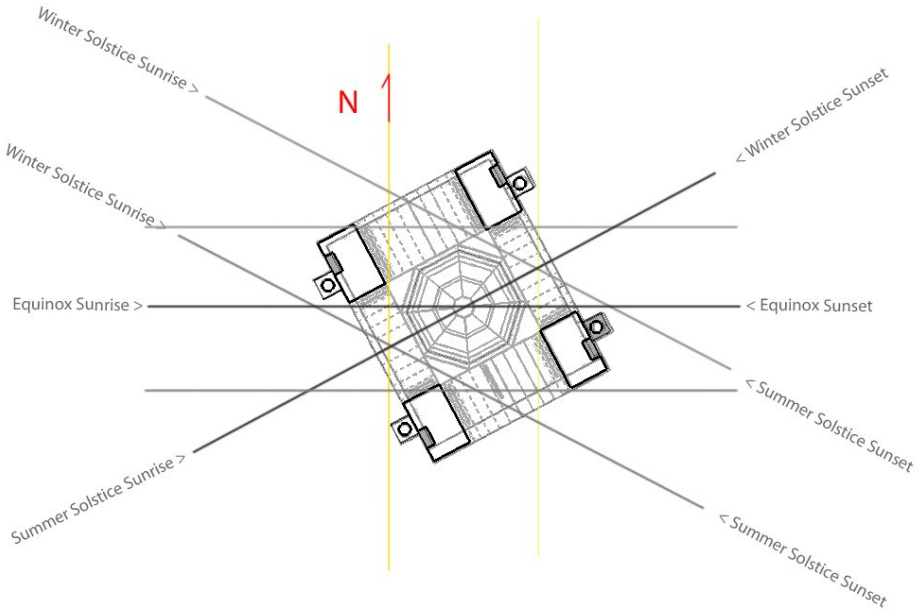

Fig. 2.67. Solstitial and equinoctial alignments of the Arch of Marcus Aurelius. Diagram by author.

This structure was constructed in 163 AD in the time of Marcus Aurelius (121–180 AD) in Tripoli, Libya. Marcus Aurelius' accession took place in 161 AD and his reign coincided with the Roman Parthian war of Lucius Verus between 161 and 166 AD. The war initially broke out in 161 when Vologases IV defeated the Romans in Armenia, captured Edessa and ravaged Syria. In 163 a Roman counter-attack defeated the Parthians in Armenia. In the following year the Romans invaded Mesopotamia, winning battles at Dura-Europos and Seleucia.[32] The concurrence of the Roman counter-attack on the Parthians with the year this structure was built could be important, as I mentioned earlier in the case of the Arch of Nero. It is possible that the structure represents the cross, as a cosmological symbol known by both the Romans and their Parthian rivals, and is associated with the victory.

[32] Martin Sicker, "The Struggle Over the Euphrates Frontier," In *The Pre-Islamic Middle East* (Westport, CT: Greenwood Publishing Group, 2000), 169.

Fig. 2.68. Satellite image of the Arch of Marcus Aurelius showing the winter sunrise solstitial alignment. Modified from Google Maps, "Palmyra."

The Arch of Caracalla (Algeria)

Latitude: 35° 24' 16.90" N

Longitude: 8° 7' 22.94" E

Elevation: 870m

Eastern horizon inclination: 0°

This structure is another Roman four-arch structure built around 214 AD in Tebessa, a city in modern Algeria, years after this city became part of the Roman Empire in 146 CE. This elegant structure seems to have originally been built on the Decumanus axis of the city, and later became the gate for a Byzantine wall founded in 535 AD to protect the city from its enemies. I believe that the wall, which survives to this date, is constructed on the orientation of Decumanus and can reveal the main street crossing the four-arch structure. Interestingly, this axis, like the Palmyran Decumanus, slightly changes orientation (by about 6 degrees) after passing the four-arch

structure. In one part (shown in figure 2.71 as Decumanus I) it is oriented towards the winter solstice sunrise direction, while the main axis of the four-arch structure is oriented to the other orientation of Decumanus (shown in figure 2.71 as Decumanus II).

This structure is also perfectly designed according to the cardinal axes, the orientation of Cardo and Decumanus, and the equinoctial and solstitial directions. A dome was also built on top of four pillars in this structure, which has not survived.

Fig. 2.69. The Arch of Caracalla, Algeria. Wikipedia, “Tébessa-Porte Caracala.”

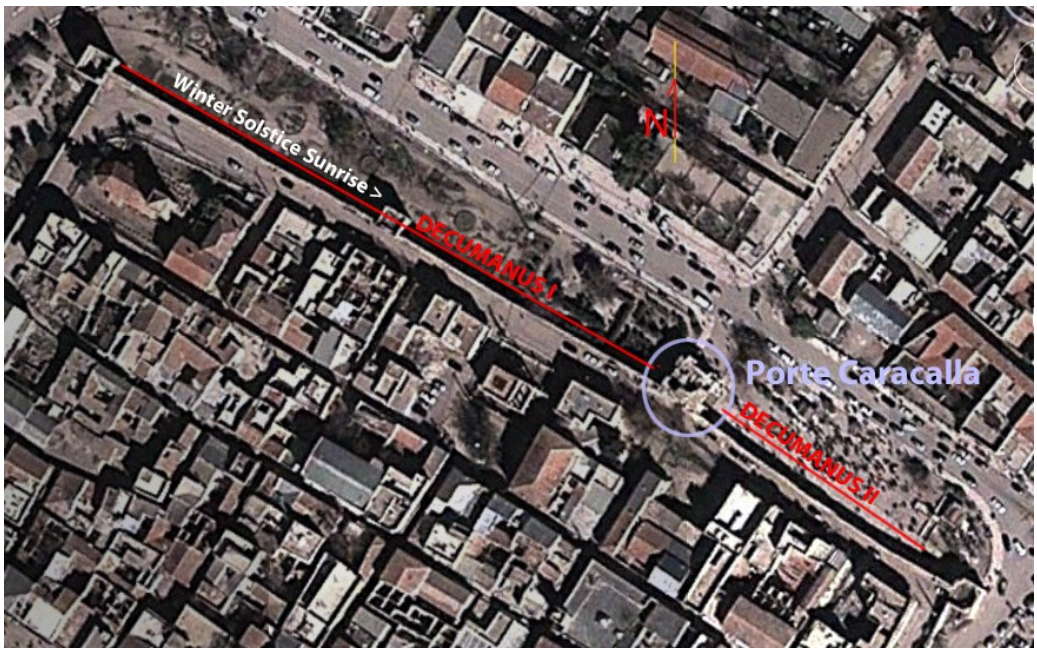

Fig. 2.70. The Arch of Caracalla. Satellite image showing the city wall which is built on the Roman Decumanus. Modified from Google Maps, "Palmyra."

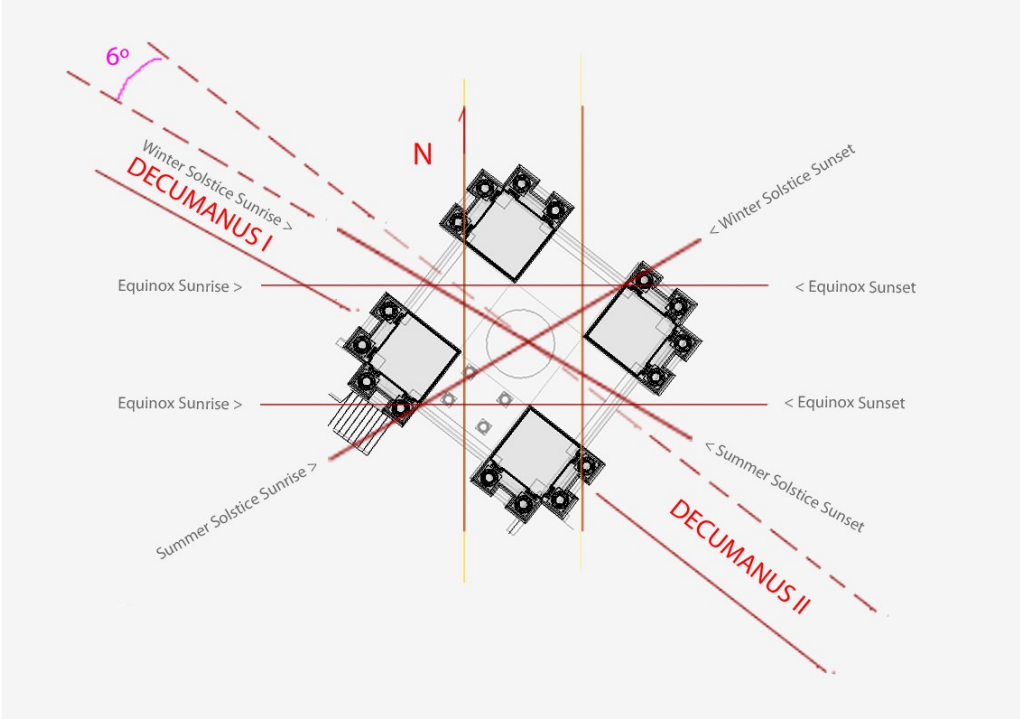

Fig. 2.71. Solstitial and equinoctial axes in the Arch of Caracalla. Diagram by author.

Chapter 3 Mithraism: An Overview

The modern term "Mithraism" replaced the terms "the Mysteries of Mithras" and "the Mysteries of the Persians" that were used in antiquity. "Mithras" is the name of the Indo-Iranian god Mithra adopted into Greek. Because of the secret nature of this cult in Roman antiquity, almost no considerable written narratives or theology from the religion survive, but fortunately hundreds of artifacts related to Mithraism have been preserved.

The majority of the research on Roman Mithraism focuses on interpreting the physical evidence, while the definition of Roman Mithraism remains problematic and controversial. Despite the fact that the Romans believed in an Iranian origin for this cult, finding its origins has been one of the controversies among twentieth century scholars.

3.1 Early Record of the Name Mithra in Asia Minor

The first surviving record of the name "Mithra," spelled *Mi-it-ra*, dates back to 1380 BC[33] in the inscribed peace treaty between the Hittites[34] and the Hurrian[35] kingdom of Mitanni in Asia Minor.[36] In this treaty the name is mentioned, from the Mittani side, together with four other Indo-European divinities as a witness and keeper of the treaty. In the earlier Indic culture,

[33] Robert Turcan, *The Cults of the Roman Empire* (Hoboken, NJ: Wiley-Blackwell, 1996), 196.

[34] The Hittite empire was established in north-central Anatolia around the eighteenth century BC and reached its height during the mid-fourteenth century BC when it ruled most of Asia Minor as well as parts of the northern Levant and Upper Mesopotamia. The empire came to an end after 1180 BC. However, several independent Neo-Hittite cities survived until the eighth century BC. The Hittite language was a member of the Indo-European language family.

[35] The Hurrians were a Bronze Age people living in Anatolia and Northern Mesopotamia, who spoke a Hurro-Urartian language of the Ancient Near East. The kingdom of Mitanni was the largest and most influential partly Hurrian nation. However, the Mitanni people spoke an Indo-European language and formed a ruling class over the Hurrians.

[36] Paul Thieme, "The 'Aryan' Gods of the Mitanni Treaties," *Journal of the American Oriental Society* 80.4 (1960): 301–317.

Mithra, in its Sanskrit form *mitra*, is a divinity of the Rigveda, with a relationship to Varuna, who is the principle of cosmic order and the regulator and coordinator of the universe. The peace treaty, in which the name of Mithra is inscribed, clearly demonstrates that he was well known, at least for both Mitannis and Hittites, in Anatolia in the twelfth century BC.

3.2 Mithra in Iran

In Iranian mythology the god Mithra appears in the Avesta, the sacred texts of Zoroastrianism. The Avesta is a compilation of ancient texts mainly attributed to the Mazdean priesthood and the Sassanid political power, of which only a fraction has been transmitted to the Zoroastrians of Iran and India today. However, it is one of the sources which can help in reconstructing the pre-Mazdean Iranian mythology, as it mentions the ancient divinities in several hymns.

The second longest Yasht (collection of hymns) of the Avesta is named after Mithra and has 146 verses. In this part of the Avesta Mithra appears to have as a companion Varahran (*Bahram* in modern Persian), a divinity associated with victory. Varahran here is described as a boar with iron teeth running in front of Mithra's four-horse chariot, fighting for him. He has a thousand eyes and a thousand ears and always stands in the high end of the north sky. Most of the references here are assumed cosmological references which we rarely see later in Mazdean mythology. In another part of the Avesta, the Gathas, which are associated with the words of Zoroaster himself, Mithra means "oath."

3.3 Mithra in India

Mitra (*Mitrá* in Sanskrit) is an important divinity of Indic culture and the patron divinity of honesty, friendship, contracts and meetings. He is a figure of the Rigveda, distinguished by a relationship to Varuna, the protector of ṛtá, which is the principle of natural order and the regulator of the operation of the universe.

The Vedic Mitra is a prominent deity of the Rigveda distinguished by a relationship to Varuna. Mitra and Varuna counted among a group of deities called Adityas (the seven celestial deities, sons of Aditi in the Rigveda). They are the supreme keepers of order and gods of the law.

In the Vedic hymns, Mitra is often invoked together with Varuna as Mitra-Varuna. In some of their aspects, Varuna is lord of the cosmic rhythm of the celestial spheres while Mitra brings forth the light at dawn, which was covered by Varuna during the night.

In 1896 Ralph T. H. Griffith translated Rigveda 3.59.1 as "Mitra, when speaking, stirreth men to labor: Mitra sustaineth both the earth and heaven. Mitra beholdeth men with eyes that close not. To Mitra bring, with holy oil, oblation."[37] This part is close to the Avestan Yasht of Mithra, which describes him as restlessly watching people between the heaven and the earth with a thousand eyes, and as never sleeping.

[37] Ralph T. H. Griffith, trans., *The Rig Veda* (Forgotten Books, 2008). Other Rigvedic hymns to Mitra-Varuna are RV 1.136, 137, 151–153, RV 5.62–72, RV 6.67, RV 7.60–66, RV 8.25 and RV 10.132.

3.4 Mithra in Commagene

Commagene was located in south-central modern Turkey in Asia Minor. It became an Assyrian province in 708 BC under Sargon II and in the sixth century BC was part of the Persian Empire. In the fourth century BC Alexander the Great conquered the area and it later became a part of the Greco-Syrian Seleucid Empire. In the Hellenistic era, Commagene was known as an Armenian kingdom between the Roman Empire and Parthia[38] and played the role of a buffer state between the Romans and Parthians.[39] Subsequently, the power struggle over Armenia provoked several wars between the Persians and the Romans which lasted for many years until the seventh century AD.

I believe this area is very important to the study of Mithraism. This is not only because the first inscribed record of Mithra is found in Asia Minor, but also because Asia Minor in general and Armenia in particular have been most intense geopolitical and intercultural contact regions between Persians and Greeks and later between Persians and Romans. The early form of Roman Mithraism that flourished in the west after the first century AD was also found in Commagene as early as the first century BC.

Mithras appears in the colossal statuary of Mount Nemrut, built in the time of Antiochus I who was the king of Commagene from 69 to 34 BC.[40] Mithras here appears, alongside other deities

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[38] E. Yarshater, ed., *The Cambridge History of Iran*, vol. 3, *The Seleucid, Parthian and Sasanian Periods* (Cambridge: Cambridge University Press, 1983), 728.

[39] Wolfgang Haase and Hildegard Temporini, *Aufstieg und Niedergang der römischen Welt* (Berlin: Walter de Gruyter, 1986), 736.

[40] Lewis M. Hopfe, "Archaeological Indications on the Origins of Roman Mithrais," in *Uncovering Ancient Stones: Essays in Memory of H. Neil Richardson*, ed. Lewis M. Hopfe (Warsaw, IN: Eisenbrauns, 1994), 156.

and the king himself, seated on a throne, wearing a Phrygian cap.[41] The Greek inscription on the back of the thrones shows the names Apollo, Mithras, and Helios.[42]

Fig. 3.1. Antiochus, in richly decorated attire with a tiara on his head, holds out his right hand to Mithras. CIMRM 30.

[41] Maarten J. Vermaseren, [CIMRM] *Corpus Inscriptionum et Monumentorum Religionis Mithriacae* (The Hague: Martinus Nijhoff, 1956–1960), 32, verse 55.
[42] Maarten J. Vermaseren, *Mithras: The Secret God* (London: Chatto and Windus, 1963), 29.

Fig. 3.2. Horoscope of Antiochus of Commagene (July 17th, 98 BC). Standing lion to the right with a crescent below his neck and a number of stars on his body and in the field. CIMRM 31.

3.5 Mithra in Rome

The Roman form of Mithraism, known as "the Mysteries of Mithras" or "the Mysteries of the Persians," was a highly secret cult with almost no first hand surviving narratives. However, it is the broadest and richest in archaeological artifacts related to the god Mithras. The origins and spread of Roman Mithraism are controversial among scholars.[43] Some believe that the cult was not practiced until the first century AD,[44] while others suggest the middle of the first century BC as the beginning of the mysteries in the west. According to the historian Plutarch, in 67 BC the pirates of Cilicia (a province on the southeastern coast of Asia Minor) were practicing "secret

[43] Roger Beck, "On Becoming a Mithraist: New Evidence for the Propagation of the Mysteries," in *Religious Rivalries in the Early Roman Empire and the Rise of Christianity*, ed. Leif E. Vaage. (Waterloo: Wilfrid Laurier University Press, 2006), 182.

[44] Manfred Clauss. *The Roman Cult of Mithras*, ed. and trans. Richard Gordon (Edinburgh: Edinburgh University Press, 2000), 22.

rites" of Mithras.[45] Whatever its status in the Roman Empire prior to that time, what is undeniable is that the underground cult of Mithras suddenly began to be distributed all over the Roman Empire in the last quarter of the first century AD.[46]

3.5.1 Iconography

Most of the inscriptions and monuments related to Roman Mithraism have been collected in a catalogue by Maarten J. Vermaseren called the *Corpus Inscriptionum et Monumentorum Religionis Mithriacae* (CIMRM). The most important artifact is a repeated bull-slaying scene, which leaves no doubt that this figure conveys the core divine message of the cult. In this scene a man wearing a Phrygian cap, generally accepted as the figure of Mithras, kills a bull. The bull always faces towards the right and the bull slayer turns his head while killing the bull. In the elaborated form, a dog, a snake, a cup, and a raven usually appear in the scene. In this scene a scorpion is attached to the bull's genitals. Two other men wearing Phrygian caps stand one on each side with crossed legs and bear torches in different positions. Usually a complete zodiac is depicted on top of the scene (or encircling the scene), or often we see clouds in a bow shape framing the scene on top. Rarely, a lion is also present sitting in the middle (figs. 3.3, 3.4).

[45] David Ulansey, *The Origins of the Mithraic Mysteries: Cosmology and Salvation in the Ancient World* (New York: Oxford University Press, 1991), 40.

[46] Roger Beck, "The Mysteries of Mithras: A New Account of Their Genesis," *Journal of Roman Studies* (1998): 118.

Fig. 3.3. Mithraic tauroctony. CIMRM 1292.

Fig. 3.4. Mithraic tauroctony. CIMRM 1083.

Another important figure of Roman Mithraism, of which many instances are found in Mithraic temples, is a lion-headed naked man, often called the “leontocephaline” or the “leontocephalic god” by scholars, entwined by a snake (fig. 3.5). He is represented as having four wings, a thunderbolt, and a key (sometimes two keys) and a scepter in his hand. Occasionally, this figure is found in human-headed form. In some instances he is shown as standing on the cosmic

sphere.[47] Identification of this figure has been an even greater challenge for scholars than finding the origins of the god Mithras. Some scholars, like Cumont, identify the lion-man as Aion or Kronos and associate him with the Iranian deity Zurvan, while others assert that he is Ahriman, the Iranian embodiment of evil.[48] While some attributions of this figure show the association of it with the concept of time, no convincing explanations exist so far. Yet identifying this figure is one of the keys to deciphering the mysteries of Mithras.

Fig. 3.5. Mithraic lion-headed figure. CIMRM 665.

[47] Howard M. Jackson, "The Meaning and Function of the Leontocephaline in Roman Mithraism," *Numen* 32.1 (July 1985): 17–45.

[48] R. D. Barnett, "A Mithraic Figure from Beirut," in *Mithraic Studies: Proceedings of the First International Congress of Mithraic Studies*, ed. John R. Hinnells (Manchester: Manchester University Press ND, 1975), 2:467.

3.5.2 History, Distribution Route, and Development of the Cult of Mithras in Rome

The beginning of the practice of the Mithraic cult in the Roman Empire is debated among scholars, but is agreed to be no later than the second half of the first century AD. An altar from near Santi Marcellino e Pietro in Rome was inscribed by an Imperial freedman named T. Flavius Hyginus, probably between 80 and 100 AD. The inscription dedicates the altar to Mithras.[49]

The earliest military inscription is from the bank of the Danube at Carnuntum, probably before 114 AD.[50] This inscription is also a dedication of an altar to Mithras set up by C. Sacidus Barbarus, a centurion of XV Appolinaris[51] who was stationed at Carnuntum, and was also originally based at Carnuntum. The movements of this legion are particularly informative, as according to C. M. Daniels, movement of troops was a major factor in the spread of the cult. Daniels attributes the distribution of the Mithraic cult to the movement of the Roman Army in the Danube region. Possibly as a result, Italy and the Danube were the two geographical regions in which Mithraism first struck root.[52]

[49] Richard L. Gordon, "The Date and Significance of CIMRM 593 (British Museum, Townley Collection)," *Journal of Mithraic Studies* 2 (1978): 148–74.

[50] Gordon, "CIMRM 593," 150.

[51] XV Appolinaris transferred to the east in 62–71 AD, first in the Armenian campaign and then to put down the Jewish uprising. In 71–86 AD it moved back in Carnuntum, in 86–105 AD was intermittently in the Dacian wars, then in 105–114 AD back in Carnuntum, and finally it moved to Cappadocia in 114 AD.

[52] C. M. Daniels, "The Role of the Roman Army in the Spread of Mithraism," in *Mithraic Studies: Proceedings of the First International Congress of Mithraic Studies*, ed. John R. Hinnels (Manchester: Manchester University Press ND, 1975), 2:249–74.

3.5.3 Rituals

December 25th – that is, around the winter solstice – is suggested by Vermaseren to be the birthday of Mithras and a Mithraic festival.[53] Other scholars disagree, however, and argue that there were no public festivals in Roman Mithraism and that the festival around the winter solstice was Natalis Invicti, a general festival of the Sun.[54]

Other rituals such as swearing an oath by Mithraic initiates and rituals related to feasting and eating sacrificial food are suggested to have been associated with Mithraism, based on archaeological findings from the Mithraic temples[55] where the rituals are believed to have been practiced.[56] Considerable numbers of Mithraic temples have been found in Rome, Ostia, Numidia, Dalmatia, Britain and along the Rhine/Danube frontier, and also in smaller numbers in Greece, Egypt, and Syria.[57]

There were several grades among the members of the cult. St. Jerome, a Latin Christian priest of the fourth and fifth centuries, lists seven grades of initiation into Mithraism.[58] Manfred Clauss associates these grades with the planets and believes that the mosaic found in a Mithraeum in Ostia depicts these grades along with the planetary symbols of the grades.[59] The grades are believed to be Corax, Corux or Corvex (raven or crow), Nymphus or Nymphobus (bridegroom),

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[53] Maarten J. Vermaseren, *The Excavations in the Mithraeum of the Church of Santa Pricsa in Rome* (Leiden: Brill, 1965), 238.
[54] Roger Beck, "Merkelbach's Mithras," *Phoenix* 41.3 (1987): 296–316; Manfred Clauss, *Mithras: Kult und Mysterien* (Munich: Beck, 1990), 70.
[55] Clauss, *Roman Cult of Mithras*, 115.
[56] Walter Burkert, *Ancient Mystery Cults* (Cambridge, MA: Harvard University Press, 1987), 10.
[57] Clauss, *Roman Cult of Mithras*, 26, 27.
[58] Jerome, "Letters," *New Advent*, accessed September 18, 2014, http://www.newadvent.org/fathers/3001107.htm), 107, ch. 2.
[59] Clauss, *Roman Cult of Mithras*, 132–38.

Miles (soldier), Leo (lion), Perses (Persian), Heliodromus (sun-runner), and Pater (father), in ascending order of importance.

According to Cumont and R. Gordon, the Mithraic cult was for men only.[60] Mithraism was very popular among the soldiers and members of the Roman army but was not limited to particular members of society.[61]

Fig. 3.6. A Mithraeum discovered under the Caracalla therms in Italy. CIMRM 457.

[60] Franz Cumont, *The Mysteries of Mithra* (New York: Dover Publications, 1956), 173; Richard Gordon, "Mithraism," *Encyclopedia of Religion*, 2nd ed, ed. Lindsay Jones (Farmington, Hills, MI: Thomson Gale, 2005), 9:6090.

[61] Clauss, *Roman Cult of Mithras*, 39.

3.5.4 Classical Literature

The earliest literary references to Roman Mithraism are believed to be by the Latin poet Statius in about 80 AD and Plutarch in about 100 AD.[62] Plutarch (46–127 AD), the Greek biographer, mentions the practice of the "secret mysteries" of Mithras by Cilician pirates in the southeast of Anatolia, who were active in the first century BC. In the epic poem *Thebaid* (80 AD), Statius pictures Mithras in a cave, wrestling with something that has horns. The cave is described as *persei* which is translated as "Persian."[63]

The most interesting report is from the second and third century historian Dio Cassius, who tells of the occasion of the coronation of Tiridates I in Rome by Nero in 66 AD. According to this account, Tiridates told Nero that he revered him as Mithras.[64] As mentioned above, this occasion was after one of the wars between Parthia and the Roman Empire that was initiated by a power struggle over Armenia. Tiridates was the Parthian prince, son of the Parthian king Vonones II and brother of the Parthian king Vologases I, whose coronation in Rome by Nero confirmed the peace treaty in which the Romans, despite their earlier intention of removing Tiridates from Armenia, which provoked a war between Parthia and the Roman Empire, agreed to accept him as the king of Armenia but crowned by the Roman Empire.[65] Whether the Roman form of Mithraism was already popular in Rome or not, recalling the name of Mithras by a Parthian prince to a Roman Emperor in the event of a coronation as the confirmation of a peace treaty

[62] Mary Boyce and Frantz Grenet, *Zoroastrianism Under Macedonian and Roman Rule,* (Leiden: Brill, 1975), 468, 469.

[63] Publius Papinius Statius, "Thebaid," *The Latin Library*, accessed September 18, 2014, http://www.thelatinlibrary.com/statius/theb1.shtml), 1.719–720.

[64] Dio, "Roman History," 63.5.2.

[65] This is when the coin of Nero appears showing the temple of Janus with closed gates to symbolically announce the beginning of the era of peace. The Arch of Nero, which did not survive to this date but is depicted on the coins as a four-arch structure having a statue of four horse chariot on top, was also constructed during these politically intense interactions between Parthia and Nero. I suspect this to be one of the first four-arch structures similar to the Iranian chartaqi.

between two great powers of the ancient world suggests that the concept of the Persian Mithra was well known to the two parties. However, the Roman cult of Mithraism could have developed later based on an independent Roman invention of rituals and iconography in the form of a popular Roman cult. Roger Beck even suggests that this moment "could have been a spur to Mithraism's emergence on to the larger stage of popular appeal."[66]

In *The Cave of the Nymphs* (*De antro nympharum*), Porphyry (third to fourth century AD) reports on Mithraism and its Persian origins. While it is doubtful that Porphyry had complete knowledge about Mithraism, his report is of high importance, particularly because he gives clear references to the astrological elements. He states: "For, as Eubulus says, Zoroaster was the first who consecrated in the neighboring mountains of Persia, a spontaneously produced cave, florid, and having fountains, in honor of Mithra, the maker and father of all things; a cave, according to Zoroaster, bearing a resemblance of the world, which was fabricated by Mithra. But the things contained in the cavern being arranged according to commensurate intervals, were symbols of the mundane elements and climates."[67] He also says: "Hence, a place near to the equinoctial circle was assigned to Mithra as an appropriate seat. And on this account he bears the sword of Aries, which is a martial sign. He is likewise carried in the Bull, which is the sign of Venus. For Mithra, as well as the Bull, is the Demiurgus and lord of generation."[68]

Another text in which the name of Mithras is present is a text from the Great Magical Papyrus of Paris, the so-called Mithras Liturgy. It is part of papyri from Greco-Roman Egypt[69] that date

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[66] Roger Beck, "Mithraism," *Encyclopaedia Iranica, Online Edition*, posted July 20, 2002, www.iranicaonline.org/articles/mithraism.

[67] Porphyry, *The Cave of the Nymphs in the Odyssey: A Revised Text With Translation*. *Seminar Classics 609, State University of New York at Buffalo* (Buffalo: Department of Classics, State University of New York, 1969), 2.

[68] Porphyry, *Cave of the Nymphs*, 11.

[69] Ronald Hutton, *Witches, Druids and King Arthur* (Hambledon and London: Palgrave Macmillan, 2006), 116.

from the second century BC to the fifth century AD. The origins of the Mithras Liturgy are debated as dating between the early first century and the early fourth century.[70] Some scholars, such as Cumont, R. Reitzenstein, and others, have expressed skepticism concerning the Mithraic origin of the Liturgy.[71] The rarity of the Mithraic cult in the Roman province of Egypt also adds to the doubt that this text is a reproduction of a genuine Mithraic text. However, it gives some original information about the nature of Mithras and it is possible that some parts were derived from a Roman Mithraic source.

3.6 Mithra in Kushanas

During the second century AD, the Kushan Empire was the fourth greatest power in the ancient world, controlling a major part of the trade route from China to the west.[72]

We can see the Greco-Roman influence on the Kushan Empire. Many Kushan-type coins are derived from Roman prototypes of the first and second centuries AD.[73] During the reigns of Kanishka and Huvishka, the sixty years during which the power of the Kushan Empire was at its zenith, Mithra in the form of *MIOPO* or *MIIPO* was usually used as a figure on the Kushan coinage.[74] However, in concept and ideology, the Iranian influence was much stronger than the

[70] Marvin W. Meyer, trans., "The Mithras Liturgy," in *The Historical Jesus in Context*, ed. A. J. Levine, Dale C. Allison, Jr., and John Dominic Crossan (New Jersey: Princeton University Press, 2006), 182.

[71] Marvin Meyer, ed. and trans., "The 'Mithras' Liturgy from the Paris Codex," *Hermetic.com: Papyrae Graecae Magicae*, accessed August 28, 2013, hermetic.com/pgm/mithras-liturgy.html.

[72] Cf. John M. Rosenfield, *The Dynastic Arts of the Kushans* (Oakland, CA: University of California Press, 1967), 1.

[73] R. Gobi, "Roman Patterns for Kushana Coins," *Journal of the Numismatic Society of India* (1960): 75–96.

[74] R. B. Whitehead, *Catalogue of Coins in the Panjab Museum, Lahore* (Charleston: BiblioBazaar, 2010), 1:187–206.

Roman.[75] The Kushan Pantheon of deities includes some thirty-three figures, as demonstrated on the coinage of Kanishka and Huvishka, and mingles various influences in a complex way.[76] While Iranian culture predominates, Indian figures such as Buddha and Greek gods such as Herakles are also included. Kanishka's later copper coinage has Iranian titles and are struck in six principal reverse types on which these deities were mentioned: *MIOPO* (Mithra), *MAO* (Mah or the moon god), NANA (the composite nature of Anahita and Venus), *OAΔO* (derived from the Avestan Väta or Persian Väd, the wind god), *AΘϷO* (the Avestan Atar or the Persian Azar), and *OHϷO* (an epithet of the Indian divinity Śiva). The figures of Mithra and Mao have a prominent place in these types of coins.[77]

[75] D. W. MacDowall, "The Coinage of the Great Kushans," in *Études Mithriaque*, ed. Jacques Duchesne-Guillemin (Leiden: E. J. Brill, 1978), 307.
[76] Rosenfield, *Dynastic Arts of the Kushans*, 59–103.
[77] MacDowall, "Coinage of the Great Kushans," 308–312.

Chapter 4 Modern Theories About Mithraism

Franz Cumont was the first scholar systematically to collect all the known archaeological records and to write a critical history of Mithraism in the Roman Empire.[78] He published the first major scholarship on Roman Mithraism in 1894–1900.[79] Cumont believed that Roman Mithraism was the "Roman form of Mazdaism"[80] and that the god Mithra came to Rome together with a large representation of the Mazdean pantheon. Cumont's theories remained widely accepted by other scholars for almost seventy years until the first International Congress of Mithraic studies in 1971. After this point the Mithraic Mysteries, which had been believed to be Persian in origin with no serious question about the matter, were suddenly treated as a new cult that should be studied almost from scratch. The first congress, along with the second congress in 1975 in Tehran, was the divergence moment in Mithraic studies towards decades in which the existence of possible Iranian Mithraic origins for Roman Mithraism was widely ignored. The two conferences are also very important because many ideas about Mithraism were brought together and challenged for the first time in these gatherings.

4.1 First Mithraic Conference in 1971

The First Mithraic Conference took place at the University of Manchester in 1971. The proceedings of the conference, published in 1975, contain some thirty papers. In this congress, John Hinnells and R. L. Gordon posed severe criticism of Cumont's theories. This conference is believed to have been a turning point in Mithraic studies because of this reappraisal of Cumont's

[78] R. L. Gordon, "Franz Cumont and the Doctrines of Mithraism," in *Mithraic Studies*, 1:215–48.
[79] Cumont, *Mysteries of Mithra*.
[80] Beck, "Merkelbach's Mithras," 298.

theory. Hinnells argued that Cumont's reconstruction of Mithraic iconography was not supported by Iranian texts and was in fact in conflict with known Mazdean theology.[81] In his paper "Reflections on the Bull-Slaying Scene," Hinnells rejected Cumont's interpretation of the tauroctony, according to which it represented a battle between good and evil or the dualistic ingredients in the Iranian myth of creation. The serpent and scorpion were interpreted as evil by Cumont, and Hinnells also rejected the thesis that these images had the same connotation in a Greco-Roman context as in the Iranian myths.[82] Hinnells noted that no Iranian text mentions bull-slaying in connection with any Iranian god or ritual. He suggests instead that Mithraic art "preserves ancient Iranian ideas of sacrifice and salvation but not expressed through Iranian motifs"; the motifs and imagery are drawn, rather, from Greco-Roman symbolism.[83]

Gordon posed an even more fundamental criticism and claimed that Cumont forced the available material and evidence to conform to his model of Zoroastrian origins for the cult of Mithra. Gordon suggested instead that Roman Mithraism was an entirely new religion with no Persian origins. He claimed that Cumont was wrong to choose Zoroastrianism, or a version of it, as his model for western Mithraism.[84] Based on the work of Stig Wikander, Gordon rejects the idea that Mithras and Anahita formed a pair in Anatolia, and that Roman Mithraism is evidenced in any epigraphic, archaeological or literary material relating to Persian cults in Anatolia until after the first century. He also argues that the identification proposed by Cumont between Iranian *yazatas* and Olympian gods occurring on Mithraic reliefs should be rejected. However, he does not agree with Wikander's argument that Roman Mithraism was a Balkan cult. The introduction

[81] John Hinnells, "Reflections on the Bull-Slaying Scene," in *Mithraic Studies*, 2:290–312.
[82] George C. Boon, review of *Mithraic Studies*, ed. John R. Hinnells, *Britannica* 7 (1976): 397.
[83] John F. Hansman, review of *Mithraic Studies*, ed. John R. Hinnells, *Bulletin of the School of Oriental and African Studies, University of London* 40.1 (1977): 161.
[84] Gordon. "Franz Cumont," 215.

of a leontocephaline god as the symbol for the Iranian god of eternal time by Cumont is also rejected by Gordon.[85] He says: "we ought to start with the hypothesis that Roman or Western Mithraism is an independent religion; our interest ought to be fixed first not on the question of where it came from but rather on its own symbolic structure. We must try to discover what kind of sense we can make of [it] by using western evidence."[86] Gordon sees in Roman Mithraism a selection and manipulation of elements of foreign culture for a particular intellectual and social purpose.

None of these scholars proposed a new model to explain Roman Mithraism. However, after 1971 a few scholars continued to maintain that new theories about Zoroastrianism should allow for some form of transfer from the east to the Roman Empire.[87]

The identity of the lion-headed figure of Mithraic iconography was also treated in several of the papers of the conference. Cumont had identified this figure with the Iranian god Zurvan. This view was maintained by Vermaseren,[88] who, however, also identified an Egyptian influence

[85] Gordon. "Franz Cumont," 215–48.

[86] John R. Hinnells, ed., *Mithraic Studies: Proceedings of the First International Congress of Mithraic Studies*, 2 vols (Manchester: Manchester University Press ND, 1975), 2:352.

[87] "[A]n indubitable residuum of things Persian in the Mysteries and a better knowledge of what constituted actual Mazdaism have allowed modern scholars to postulate for Roman Mithraism a continuing Iranian theology. This indeed is the main line of Mithraic scholarship, the Cumontian model which subsequent scholars accept, modify, or reject. For the transmission of Iranian doctrine from East to West, Cumont postulated a plausible, if hypothetical, intermediary: the Magusaeans of the Iranian diaspora in Anatolia. More problematic, and never properly addressed by Cumont or his successors, is how real-life Roman Mithraists subsequently maintained a quite complex and sophisticated Iranian theology behind an occidental facade. Other than the images at Dura of the two 'magi' with scrolls, there is no direct and explicit evidence for the carriers of such doctrines.... Up to a point, Cumont's Iranian paradigm, especially in Turcan's modified form, is certainly plausible." Roger Beck, *The Religion of the Mithras Cult in the Roman Empire* (Oxford: Oxford University Press, 2006), 48–50.

[88] M. J. Vermaseren, "A Magical Time God," in *Mithraic Studies,* 2:446–56.

from the Hellenistic Age.[89] A. D. H. Bivar related the lion-headed figure to the Babylonian gods of death and the underworld, Nergal and Moloch.[90]

J. P. Kane, in "The Mithraic Cult Meal in Its Greek and Roman Environment,"[91] argued that Roman Mithraism had certain rituals with no Greco-Roman background, but conformed "to the most characteristic cult practices of its environment." He finds no evidence of the "*haoma* ceremony" (*haoma* is the name of a plant mentioned in the Avesta and believed to be used for the preparation of a sacred drink) proposed by Cumont or of eating the flesh of a bull and drinking its blood as was formerly mentioned by Vermaseren.

M. Schwartz, in "Cautes and Cautopates...," presented an etymological study of the torchbearers of the Mithraic tauroctony. This paper opened a new perspective on interpreting torchbearers to Cumont's model, according to which they were thought to be Mithras himself.[92]

W. Lenz studied the Mithraeum with astronomical calculations and the effects of light within them in his paper "Some Peculiarities Not Hitherto Fully Understood of Roman Mithraic Sanctuaries and Representations."[93] Studying the construction features of several Mithraea, he suggests that they were "serving as primitive observatories according to the gnomon principle" and finds ancient evidence for this in the Avesta and also at Persepolis.[94] He quotes Vermaseren: "frequently the temple was directed towards the east in such a way that the first rays of the rising

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[89] R. M. Ogilvie, review of *Mithraic Studies*, ed. John R. Hinnells, *The Classical Review, New Series* 27.1 (1977): 48, 49.

[90] A. D. H. Bivar, "Mithra and Mesopotamia," in *Mithraic Studies,*1:275–89.

[91] J. P. Kane, "The Mithraic Cult Meal in Its Greek and Roman Environment," in *Mithraic Studies*, 2:313–351.

[92] M. Schwartz, "Cautes and Cautopates," in *Mithraic Studies*, 2:406–423.

[93] W. Lentz, "Some Peculiarities Not Hitherto Fully Understood of Roman Mithraic Sanctuaries and Representation," in *Mithraic Studies*, 2:358–77.

[94] Mark J. Dresden, review of *Mithraic Studies*, ed. John R. Hinnells, *Journal of the American Oriental Society* 97.4 (1977): 556–58.

sun hit the bull-slaying god through a window or another aperture in the vault."[95] However, he claims that Vermaseren gave no exact references or documentation for this observation. Lenz also mentions the work of Campbell[96] in a chapter called "The Zodiac and Mithraic Orientation," in which Campbell investigates the direction of the tauroctony in Mithraeum, the way light falls on the image at certain times, and the order and position of zodiacal signs represented in certain Mithraea. Lenz tries to explore along the same lines but in more depth, providing some interesting hypotheses. He claims that Campbell "tries to establish an 'ideal' type of Mithraeum. It should be circular (two instances) or elliptical (one instance) and, as we have just seen, oriented in the technical sense of the word, i.e. directed towards prominent (equinoctial or solstitial) points of the horizon."[97] While not reaching a general formula for the design of Mithraea, Lenz provides examples of the possibility of an astronomical use of several openings in certain Mithraea and the possibility of light reflection techniques or illumination of other monuments in Mithraea. He also suggests a possible relationship between the order and position of the elements of certain tauroctony scenes and the light beam. He does not say much about the possibility of observations of stars in Mithraea because his main focus is on illumination by the sun or the moon. However, he puts forward a very important problem: "the search for traces of sky visures in connection with Mithraeum." Lenz believes that these considerations can enable us to better understand the scanty western literary sources on Mithraism and also the much disputed question of the historical relations between Roman Mithraism and Iran. He mentions a

[95] Lentz, "Some Peculiarities," 359.
[96] John R. Hinnells, review of *Mithraic Iconography and Ideology*, by L. A. Campbell, 44ff, *Religion* 1 (1971): 66–71.
[97] Lentz, "Some Peculiarities," 361.

highly developed observatory in Persepolis,[98] and also a literary source about a primitive observatory called *var* or *vara* in the Avesta.

I should briefly mention some other original contributions to Mithraic studies in this conference. Among other papers in this conference, C. M. Daniels' "The Role of the Roman Army in the Spread and Practice of Mithraism" surveyed the incidence of Roman Mithraic monuments outside Italy. U. Bianchi presented a paper on links between Mithraism and Gnosticism, S. G. F. Brandon spoke on the notion of the judgment of the dead, R. E. Witt wrote on "Isis in Relation to Mithras," and A. Deman contributed a highly interesting antiquarian piece on Mithraic influences on Christian iconography of the medieval period.[99]

4.2 The Second International Congress of Mithraic Studies in 1975

The second congress on Mithraic Studies took place in Tehran in 1975, sponsored by the Imperial Pahlavi Library. This congress brought together different disciplines and was a unique encounter between scholars in Greco-Roman and Oriental Archaeology, Linguistics, History of Religion, Iranian Studies, and the Parsi tradition. Since the divergence among occidental and oriental scholarship on Mithraism had become evident in the conference of 1971, this encounter raised practical problems in finding a common basis for discussion. Most of the papers of the 1975 conference can be categorized as treating either the "eastern" Mithra/Mitra or the "western"

[98] W. Lentz and W. Schlosser, "Persepolis – ein Beitrag zur Funktionsbestimmung," *ZDMG*, supplement I (Wiesbaden 1969): 957–82; W. Schlosser and G. Gropp, "Persepolis – weitere Beiträge zur Funktionsbestimmung," *ZDMG* 121.2 (1971): 254–68.

[99] Hinnells, ed., *Mithraic Studies*.

Mithras.[100] The theories of Cumont about the continuity of Mazdean theology and Roman Mithraism were also increasingly challenged.

Some papers approach the name Mithra(s) and the Mithraic literature with a philological and linguistic analysis. The name Mithra itself, which was at least agreed to have an eastern origin, was one of the core questions for a few scholars. H. P. Schmidt claimed that "the prime aim of a *mitra* in Indo-Iranian times was the establishment of peace which guaranteed life and prosperity. This accounts for quite a number of the functions of the deity personifying the concept."[101] He suggests that *mithra* means "alliance," fitting with his search for a "concept" rather than a deity as the meaning of this term. The Indo-European roots of the name also suggest "friendship," "contract," and "loyalty." Giulio Bonfante also addresses the question of the meaning of the name Mithra. He suggests that "the cause of the etymological affinity, nay identity of *mithrah* (the god), *mithrah* (the friend), *mithram* (the contract) becomes now clear: *mithram* is the oldest word, which by personification and duplication (…) became the god *mithrah*…." He claims that in Iran "the personification of the god who was much more important than in India (…) went so far as to replace the ancient neuter *mithram*."[102]

The etymological and philological approach to the problem is very important, but could be reductionist, focusing too much on the meanings and concepts of terms, explaining the mythological and religious functions merely as the personification or the divinization process of the concept. Nonetheless, this approach contributes to finding the historical and geographical distribution path of the myths and their original social functions. Jaan Pahvel also pursues this

[100] Ugo Bianchi, "The Second International Congress of Mithraic Studies," *Journal of Mithraic Studies* 1.1 (1975): 77–94.
[101] Hans-Peter Schmidt, "Indo-Iranian Mithra Studies: The State of the Central Problem," in *Étude Mithriaqu*e, 345–94.
[102] Giulio Bonfante, "The Name of Mithra," in *Étude Mithriaque*, 48.

line of investigation, suggesting that Varuna, a frequent companion of Mithra, personifies "oath" and the reinforcement of the contract, while the Vedic Mitra carries the sense of "peace-giver."[103]

Paul Thieme, in "Mithra in the Avesta," investigates the linguistic and "poetical" elaboration of Mithra in the old Iranian scripts. He contrasts Mithra with Anahita (another Iranian deity) and acknowledges that "Mithra is made responsible for further blessings, which are not the immediate effect of the safety of peace."[104]

Despite its title, "The Routes of Early Mithraism" by Per Beskow is not interested in the route of distribution of Mithraism from Iran, but instead accepts the new trend in Mithraic studies based on the isolation of Roman Mithraism as a new religion. Beskow believes that "if we want to establish the routes of Mithraist expansion, we have to start within the Roman Empire and consider those regional varieties that appear in the monuments, and which seem to reflect different stages in the history of the cult."[105] He looks at minor differences among Mithraic iconography from different regions and follows the distribution path of Roman Mithraism within the Roman empire.

Another problem in the study of Mithraism is identifying the companion deities of Mithra. The Indic Mithra is accompanied by Varuna in the Vedic texts and the Iranian Mithra is accompanied by Varahran. Ugo Bianchi, in "Mithra and Iranian Monotheism," looks at Mithra in the Indo-Iranian pantheon and at the migration and connection of the gods and their mythical companions in different theological frameworks. In these frameworks, one god can be deified or demonized

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[103] Jaan Puhvel, "Mithra as an Indo-European Divinity," in *Étude Mithriaque*, 335–43.
[104] Paul Thieme, "Mithra in the Avesta," in *Étude Mithriaque*, 501–510.
[105] Per Beskow, "The Routes of Early Mithraism," in *Étude Mithriaque*, 7–18.

and play a different role based on the deformation of concepts. One important question that Bianchi addresses is the connection of the Vedic deities Indra and Vrthragna. He says: "Here we must avoid two extremes, opposite positions: the one represented by Widengren, according to which the Iranian VərəΘraϒna is but a connection of Indra *vrtrahan*; and the other represented by Thieme, on the path of Benveniste and Renou, according to which VərəΘraϒna, who accompanies the fighting Mithra in the *Mihr Yasht*, in the shape of a wild boar, was replaced by Indra in the Rigveda…. So Vrtraghna was amalgamated with Indra in the Rigveda."[106]

Any minute findings are of precious value in this field, and John Andrew Boyle mentions an Armenian folk story that seems to preserve a pre-Christian Mithraism on the one hand and is connected to ancient Iran on the other hand. In this story the hero, called Mher, is asked to go and find the raven's rock in order to be saved from evil. In a part of the story, "he came to a great rock that was called the Carved Rock. The rock opened like a cave. He looked, the raven had gone inside…. The door closed and he with his horse was left inside…. To this day Mher and his horse are still hale and hearty. Night and day one candle burns on either side. To this day Mher sits there astride his horse."[107] In this story Mher says he will return "when a grain of a wheat is as large as a hip and a barleycorn is as big as a plum." Boyle mentions that the poem ends with Mher contemplating the *Chaxri Felek*, which is probably a corruption of the Persian expression *charx-i-falak*, "the celestial sphere." In this part:

[106] Ugo Bianchi, "Mithra and Iranian Monotheism," in *Étude Mithriaque*, 19–46.
[107] J. A. Boyle, "Raven's Rock: A Mithraic Spelaeum in Armenian Folklore,"in *Étude Mithriaque*, 65–66.

> Mher is there, inside the cave in the Van Rock. It is also called Mher's Door. Cuneiform writing is engraved deep on the door of the rock. The Chaxri-Felek is turning inside this rock. It is a sign of the sun which soars and turns day and night, which, like the fiery horse, flies up and up. This is the soaring wheel of the terrestrial globe, and Mher is always watching it. When this wheel stops one day and turns no more, Mher's Door will open. Then Mher will be freed and will come out and will ravage the world. But when shall we see this? When the world comes to an end?[108]

This story, as a piece of folklore, might be mixed up with stereotypes of a folk story, but the elements of the story and the way they are ordered strongly suggests a deep connection with an ancient myth in which the rock, raven, cave, and the cosmos are related to a hiding/sleeping hero who will appear at the end of the cosmic cycle.

Ahmad H. Dani, in "Mithraism and Maitreya," identifies Mithra with the sun-god and suggests that by the time of the Kushanas the new concept of the sun-god had crept into India. He suggests different forms of Mithra, from one of which is derived the Maitreya while the original Mithra was absorbed into growing Buddhism in Gandhara.

Interestingly, Dani cites Bivar and mentions the confusion between Zeus, Helios, and Mithra in Roman iconography: "There is a general confusion between the Iranian Mithra and Zeus. Bivar calls Helios, appearing on the coin of Plato, Mithra. Lahiri notes four types of Helios shown on

[108] Boyle, "Raven's Rock," 69.

the coins of this ruler. Bivar takes one type, in which the quadriga is driven to the front and its square structure is visible, to be Iranian in appearance."[109]

Susan B. Downey focuses on the "Syrian Images of Mithras Tauroctonos" and maintains that the origins of Roman Mithraism are confusing and subject to speculation. She reports that despite the relative proximity of Syria to Iran, all of the Mithraic evidence in Syria is late and could not have arrived in Syria earlier than in Rome. She pays attention to characteristics of Syrian and Mesopotamian Mithraic iconography and suggests that the differences of these from other categories of Roman Mithraic iconography might be the result of local gods and symbols. Also in a report on the Dura Mithraeum (located in Syria) in her paper, Downey cites Campbell: "In the later periods of Dura Mithraeum the cult frames were framed by paintings above and to the sides; the decoration, both painted and sculptured, formed a coherent whole, In the soffit of the arch of the late Mithraeum were painted the signs of the zodiac. Apparently arranged in the 'eastern' order."[110]

Jacques Duchesne-Guillemin talks about the Iranian and Greek presence in Commagene, where is found not only evidence of early Roman Mithraism, but also the first record of the name of Mithra along with some other Vedic companions of Mithra such as Varuna and Indra. These were written in a peace treaty between the Hittites and the Mittanis on the Mittani side. Among several speculations the author also investigates the relationship between the Iranian Zurvan and the Greek Aion and Chronos.[111]

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[109] Ahmad H. Dani, "'Mithraism and Maitreya,'" in *Étude Mithriaque*, 92.

[110] Downey, Susan B. "Syrian Images of Mithras Tauroctonos," in *Étude Mithriaque*, 135–150. The citation is from L. A. Campbell, *Mithraic Iconography and Ideology* (Leiden, E. J. Brill, 1968), 48.

[111] Jacques Duchesne-Guillemin, "Iran and Greece in Commagene," in *Étude Mithriaque* (Leiden: E. J. Brill, 1978), 187–200.

Richard N. Frye looks at archaeological evidence of Mithra in Iran. He identifies some Sassanid figures as personifications of Mithra. Mithra was well known to the Sassanids and they swore oaths to Mithra, but anthropomorphic representation of Mithra is not a common tradition in Iran. Frye claims "there is one symbol, mostly found on seals, which may relate to Mithra, and that is a chariot pulled by two or more winged horses. One such seal in Berlin shows a bust with rays coming from the head above the chariot and flying horses, with an inscription giving the name *humitra*.... In Mithra Yasht the deity is described in terms understandable as riding on a chariot or quadriga, and the iconography of the seals could thus refer to the Yasht."[112] He also identifies the quadriga pulled by winged horses in the cave of a small Buddha of thirty-five meters in height in Bamian, and believes that despite the fact that this quadriga was declared by several scholars, such as Y. Godard and J. Hackin, to represent the moon god, the iconography fits Mithra very well. Frye suggests that ambiguities in understanding the symbol of the quadriga would indicate that by the late Sassanid era, people probably thought little about any original meaning of the quadriga. Frye also mentions some remains and influences of Mithraic terminology in later periods and other languages. For example, the word *mehrjan*, which means "festival" to Arabs and some Syrians, is the Arabic pronunciation of *mehrgan* (the festival of *mehr*), or *dar-i-mehr*, the "door of Mithra," which is used in the call to the fire temple by Zoroastrians (this word is repeated in the Armenian folklore discussed by Boyle).[113]

Jalaladdin Imam-Jomeh searches for physical evidence of Mithraea in Iran and suggests a building in Takht-e-Soleyman in northwest Iran as a possible Mithraeum. This site was an important Sassanid royal and religious site, but was sacred even before the Sassanids. The

[112] Richard N. Frye, "Mithra in Iranian Archaeology," in *Étude Mithriaque*, 210.
[113] Frye, "Mithra in Iranian Archaeology," 205–212.

building that Imam-Jomeh suggests as potentially a Mithraeum is not the main hall of the well-known fire temple of Azar-Goshasp, but the other adjacent building which resembles the basilicas of the early Christians. In his view this may have housed Takht-e-Taqdis, a reported planetarium or astronomical/astrological center in Iran that is extensively talked about by medieval writers. Whether or not this particular building is the same famous Takht-e-Taqdis, relating this issue to Mithraism and finding parallels for Mithraic temples in Iran is important. Imam-Jomeh quotes several historical sources, including Tha'aleby of Neishabur (960–1037 CE), who claims: "The vault of *takht-e-taqdis* was dark blue on which the constellations, stars, Zodiac Signs, as well as the seven Climates were shown…; There was a gadget telling the time in day and night. There were four huge carpets reflecting the scenery of the year's seasons."[114] As cited by Imam-Jomeh, Ali ben Husain Masudi (tenth century CE) maintains that: "In the debris of the buildings at Shiz (Takht-e-Solaiman), the excavator may find remains of marvelous colored pictures representing the celestial bodies, the stars, the earth with its continents and its oceans…"[115] In 1010 CE Ferdowsi claimed in *Shahnamah*: "There were other painting scenes of the people from all walks of life … there existed huge movable curtains through which they showed movements of the heavenly bodies. When the sun was shining from behind the throne, gardens appeared in front, and plains from behind. When the sun shone in the sign of Leo, the throne had its back towards it." And "The twelve signs and the seven movables were also demonstrated. They showed the moon in the sign in which it set, some stars stayed on and some passed by. You saw before your eyes the phenomena of the sky. You saw how much time had already expired, also how much of the heavens revolved round the earth. Similarly, the

[114] Jalaladdin Imam-Jomeh, "In Search of a Mithraeum at Takht-e-Solaiman," in *Étude Mithriaque*, 256.
[115] Imam-Jomeh, "In Search of a Mithraeum," 256.

movements of the planets, the sun and the moon were vividly shown across the sky."[116] Imam-Jomeh dose not answer the problem of the connection of Takaht-e-Taqdis to Roman Mithraea but at least encourages archaeologists to find parallels in Iran and to consider astronomical evidence in Iranian studies.

Michael P. Speidel talks about a particular case in which contact between the Iranian Mehr and the Roman Mithra is possible. This contact is reduced to the contact of two armies in Dura-Europos where the Romans took a Parthian fortress. Speidel suggests that this makes the transfer of Mithra to Rome possible from their Parthian enemies, and points out that the Magi at Dura-Europos were members of the Roman army.[117]

Mithra, in the form of Mihr-Yazd, is also a Manichaean divinity. Because of the syncretic nature of Manichaean theology, its divine elements were borrowed from existing religions in the east. In the Manichean pantheon, Mihr (Mehr) may have had only a restricted connection with the original divinity, as we can see in Zoroastrian sources. W. Sundermann, in "Some More Remarks on Mithra in the Manichaean Pantheon," searches for the eschatological nature of Mithra through Manichaean sources and traces the reflections of the original Mithra in this worldview. The interesting point that he brings up is the reference to the Zurvanite Mithra by Plutarch. Sundermann claims: "According to Benveniste, Plutarch (about 46–120 CE) called Μίθρης the mediator (μεσίτης) between Oromazes and Areimanios in this same sense. [118] The matter of the contract at least, that is, the limitation of Ahriman's dominion to 9000 years, was known by

[116] Imam-Jomeh, "In Search of a Mithraeum," 256.
[117] Michael P. Speidel, *Mithras-Orian: Greek Hero and Roman Army God* (Leiden: Brill Academic Publishers, 1977).
[118] Emile Benveniste, *The Persian Religion According to the Chief Greek Texts* (Paris, Librairie Orientaliste Paul Geuthner, 1929), 87ff., 93f.

Plutarch and reported by him on the authority of Theopompus.[119] This led Benveniste to the conclusion that "the whole text" as it has been handed down by Plutarch "must henceforth be regarded as an authentic and ancient exposition of Zurvanism. By Theopompus who is quoted, and by Eudemus who perhaps inspired it, it takes us back to the fourth century B.C.[120] Even if the Zurvanite purport of the myth is doubtful at least, its pre-Manichaean origin is well-established."[121] Sundermann also connects this Plutarch with the *Znad I Wahuman Yasht*. He continues: "If Benveniste's and Zaehner's interpretations of the above quoted Plutarch-passage are right, Mani might have known about a Zoroastrian myth according to which Mihr-Yazd brings about a treaty between Ohrmazd and Ahriman. Although acting as an impartial mediator he actually saves Ohrmazd from the onslaught of the dark powers and will finally contribute to Ohrmazd's victory."[122] Sundermann seeks the remains of the original Mithra in the Manichaean form that appears later in the Sassanid era.

Paul Thieme looks at Mithra in the Avesta and seeks the exact meanings of Avestan words related to Mithra. His approach is more descriptive than analytic and he is concerned with the meanings and poetic manifestations more than the mythical concepts and the cosmological origins of the terms.[123]

The Roman lion-headed Mithraic figure is a naked man with human body, entwined by a snake with a lion head and an open mouth, giving a frightening impression. He usually has four wings, one or two keys, and a scepter in each hand. In some cases he is standing on the cosmic sphere.

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[119] Benveniste, *The Persian Religion*, 71f.
[120] Benveniste, *The Persian Religion*, 112f.
[121] Werner Sundermann, "Some More Remarks on Mithra in the Manichaean Pantheon," in *Étude Mithriaque*, 497–98.
[122] Sundermann, "Some More Remarks," 499.
[123] Paul Thieme, "Mithra in the Avesta," in *Étude Mithriaque*, 501–510.

Rarely, he is also shown with a human head. This figure is restricted to Mithraic iconography and, among Mithraic artefacts, is almost as important as the tauroctony. The details and attributes of this mysterious figure are even more complicated to decode and interpret than the other figures and therefore its identity remains highly controversial; however it is crucial to decoding the mystery of Mithraism. Cumont identified this figure with the Iranian Zurvan because of direct symbolic references to the concept of time in this figure. He suggests that it has an Egyptian origin corresponding with the Greek Aion and or Greco-Phoenician Kronos.[124] Like other interpretations by Cumont this was generally rejected by the new trend of scholars. Duchesne-Guillemin suggests that both Aion and Ahriman are represented by the lion-headed figure.[125] Bivar also suggests a connection with Nergal, the Mesopotamian underworld god.[126] John Hansman follows Hinnells, who had suggested that this figure is a being who presides over the ascent of the planetary ladder by the souls, and introduces the lion-headed god as a possible "divine soul inspired in part by the speculative writings of classical Greek philosophy."[127]

Hubertus Von Gall focuses on this figure. He believes that Cumont was influenced by Georg Zoëga, who first introduced this figure as the parallel to the Greek god Aion.[128] Gall also points out that Cumont believes in the identity of Aion with the Iranian god Zurvan and the "origin of things."[129] While Cumont sees this figure as identical to Kronos and Aion and thus Zurvan because of the aspects of the time god in this figure, Gall sees this argument as highly improbable. He says: "none of the Greek inscribed monuments show Aion winged and entwined

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[124] Cumont, *Mysteries of Mithra*, 121.
[125] Duchesne-Guillemin, "Iran and Greece in Commagene," 187–200.
[126] Bivar, "Mithra and Mesopotamia," 289.
[127] John Hansman, "A Suggested Interpretation of the Mithraic Lion-Man Figure," in *Étude Mithriaque*, 215–227.
[128] Hubertus von Gall, "The Lion-Headed and the Human-Headed God in the Mithraic Mysteries," in *Étude Mithriaque*, 511–525. See Georg Zoëga, *Bassi rilievi anticho di* Roma 2 (Rome 1808): 32ff.
[129] Cumont, *Mysteries of Mithra*, 107.

by a snake, nor does a snake accompany this god."[130] He also rejects the idea that this god is identical to the Iranian Zurvan, based on the great Greek formula for the abjuration of Manichaeism in which the Manichaean Supreme God, the so-called Father of Greatness, is described as *tetraprosopos*, which means in its exact translation "four-faced." Gall says: "Now the designation of the four-fold god Zurvan as tetraprosopos, the Latin equivalent of which would be quadrifrons, points clearly towards a conception of a multiheaded god. If we accept this it would be incomprehensible that the followers of Mithraism in looking for a figurative type for Zurvan – if they really ventured that principle in their temples – would not have adopted the type of Ianus quadrifrons so readily at hand in Imperial Rome and also a real time god."[131] Cumont may have jumped to conclusions in claiming that this figure with time god attributes should be an exact parallel to an Iranian or Greek time god, but the relationship between this figure and the concepts behind Iranian and Greek time gods is highly probable. Gall suggests a similarity rather than a difference between these figures.

Gall disagrees with Zaehner's view of the leontocephalic demon as the "prince of this world Ahriman" ruling over the elements and believes that the figure cannot have an evil character like the Iranian Ahriman. He mentions a figure in CIMRM (monument 849): a relief in Vienna standing between the Dioscuri (the Greco-Roman twin brothers) as the typical savior god of Roman Mithraism.[132] As he points out, we cannot demonize this figure just because of its snake and terrifying face, for this figure has also occurred with a human face, has no other demonic characteristics, and would be an important object in a Mithraeum. Terrifying figures in mythological symbolism may also reflect the power of a savior god facing demons and enemies.

[130] Von Gall. "Lion-Headed and Human-Headed God," 513.
[131] Von Gall. "Lion-Headed and Human-Headed God," 514.
[132] Von Gall. "Lion-Headed and Human-Headed God," 519.

4.3 Mithraic Studies Today

In the past, the majority of scholars maintained that Mithras was nothing other than a typical sun god, although the distinction between Sol, the Roman sun god (or Helios in its Greco-Roman form) and Mithras is clear in Roman Mithraic iconography. Furthermore, the Persian Mithra is not called a sun god according to the *Mihr Yasht* of the Avesta; instead he is described as a young man who stands in the high end of the north sky, on the Alborz mountains, restlessly watching and listening with his thousand eyes and thousand ears, and who appears before the sunrise and after the sunset.

The modern astrological reconstructions for interpreting Mithraic iconography suffer from a self-referential hypothetical nature and do not draw an acceptable framework for describing the vital symbolic meaning of the particular selection of astrological symbols in Mithraic theology. While at the extreme end of the spectrum, scholars like Ulansey seek a solid astronomical model for Mithraism, Roger Beck takes a moderate and equivocal position in using astrological models. At the other end of the spectrum, some other scholars even see astrology and astronomy as outside the context of Mithraism, despite the fact that the Mithraic iconography appears to be nothing other than a collection of astrological symbols. In Mithraic studies, near-acceptance of one argument about the origins of Mithraism often requires exclusion or disqualification of the others.

4.4 Roger Beck

I must briefly introduce Roger Beck, a Canadian scholar who wrote extensively on Mithraism among the post-Cumontian scholars. He published a collection of his works (titled *Beck on Mithraism*) in 2004 in the introduction of which he drew conclusions from his approach to the problem of Mithraism. He argues that Mithraism should no longer be considered as a single doctrine and says: "That Mithraism had anything like a systematic and coherent body of teaching, transmitted to the initiates as a necessary element of the mysteries or guarded by the Fathers as arcane, I no longer consider tenable."[133] Instead of a single doctrine for Mithraism he suggests "a loose network of cosmological, theological and stereological ideas which were expressed, transmitted and apprehended symbolically in the iconography of the monuments, the design of Mithraea, the performance of rituals."[134] He emphasizes on apprehension of symbols as a methodology in the form of symbolist anthropology. He believes that "a complex of symbols cannot be read off like an encoded message once one finds the key."[135] Instead, he believes the potential of the new "cognitive science of religion" for the exploration of ancient religions is immense and should be considered as an approach to apprehend the Mithraic symbology.[136]

Beck, like most of the recent scholars of Mithraism, agrees with the importance of astronomy and astrology but suggests astronomy and astrology as medium, not message. He says that these disciplines "convey esoteric truths about Mithras and Mithras-dominated universe, but those esoteric truths are not themselves, at least for the most part, astronomical or astrological."[137]

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[133] Roger Beck, *Beck on Mithraism: Collected Works with New Essays* (Hamprhire: Ashgate, 2004), xxii.
[134] Beck, *Beck on Mithraism*, xxii.
[135] Beck, *Beck on Mithraism*, xxiii.
[136] Beck, *Beck on Mithraism*, xxi–xxvii.
[137] Beck, *Beck on Mithraism*, xxi–xxvii.

4.5 David Ulansey's Astronomical Framework: A Controversial Theory

David Ulansey was inspired by Roger Beck and the linguist Stanley Insler and was the first, after the conference of 1971, to suggest a new approach to decoding Mithraic iconography based on astrology.[138] Ulansey also insists that Roman Mithraism has no considerable reference to the Persian Mithra, based on criticisms of Cumont's Mazdaean theory by Gordon and Hinnells, and seeks the origins of Mithraism in Asia Minor based on Stoic knowledge of astronomy. Plutarch's report on the pirates of Cilicia plays a significant role for Ulansey in justifying the western origins of Roman Mithraism.

Ulansey thinks that Cumont's theory led to the truth of Mithraism being veiled for seventy years under the guise of Iranian religion and Roman Mithraic iconography. Cumont was aware of the astrological symbolism in Roman Mithraic artifacts but considered these symbols to represent a Hellenized and artistic imaginative depiction of Mazdaean concepts rather than star maps. That these symbols had already been suggested as a star map even before Cumont, by K. B. Stark in 1869, used to be commonly ignored until 1970s.[139]

Ulansey's first objection to Cumont is the lack of a tauroctonous counterpart in Roman Mithras for the Iranian Mithra. Ulansey repeats Michael Speidel's question about finding a corresponding constellation for Mithras as the bull-slayer, but is not convinced by Speidel's suggestion that Mithras is Orion. He argues that, based on Speidel's model, Aries and Libra should have been in the equatorial group instead of Taurus and Scorpio.[140] He suggests Taurus and Scorpio as the equinoctial constellations around the second millennium BC, and suggests that Mithras instead

[138] Ulansey, *Origins of the Mithraic Mysteries*, 19–20.
[139] Ulansey, *Origins of the Mithraic Mysteries*, 15.
[140] Ulansey, *Origins of the Mithraic Mysteries*, 20.

corresponds to Perseus. He believes that this concept originated in Asia Minor and developed in Rome as a new cult.[141] Because the constellation Perseus is located above the constellation Taurus in the sky and is often anthropomorphized as a young man with a Phrygian cap, Ulansey takes this constellation as the bull-slayer of the tauroctony. He suggests that the Phrygian cap of Perseus is the result of the belief in Greek mythology of the connection of Perseus with the Persians, a belief that was a mere mythological construction. Ulansey also sees the lion-headed god as a parallel to the Greek Gorgon, who is killed by Perseus. Despite the fact that Gorgon has no lion head in Greek iconography and has a feminine character, Ulansey tries to find similarities and connect Gorgon to the Mithraic figure.

Relying on a report of Plutarch about the distribution of Roman Mithraism from a Cilician origin, Ulansey also seeks a secret cult in Cilicia in which Perseus plays a significant role to justify his argument. He suggests the bull and scorpion as the equinoctial constellations of the age of Taurus-Scorpio and the tauroctony as derived from a bull-scorpion symbol from two millennia before the emergence of Roman Mithraism as equinoctial astrologic symbol. He puts the lion and the cup in a separate group among the symbols of the tauroctony and suggests that these symbols represent Leo and Aquarius, the solstitial constellations of the age of Taurus-Scorpio. Ulansey claims that the cup and lion generally appear together in the Danube and Rhine areas only.

Ulansey prefers not to relate the cup to Crater despite the fact that the cup seems to be an obvious representation of Crater in the tauroctony. From his argument it is obvious that Ulansey struggles between assigning the symbol of the cup in the tauroctony to Aquarius (in order to

[141] Ulansey, *Origins of the Mithraic Mysteries*, 93–94.

complete a solstitial pair corresponding to his Taurus-Scorpio equinoctial model) and losing Crater from his equatorial club of constellations.[142]

Interestingly, the wheat ear that forms the tail of the bull or the blood of the bull in the tauroctony is not considered by Ulansey as an astrological symbol, although it represents Spica, the brightest star of the constellation Virgo, in Greco-Roman symbolism. Ulansey acts selectively in the interpretation of the wheat ear and the cup to complete his own framework, which considers Spica as the symbol of the spring and the revival of nature growing from the bull as the sign of spring equinox in the tauroctony.[143]

In order to justify his claim that the bull and scorpion in the tauroctony are the equinoctial constellations, Ulansey takes up Porphyry's report in *Cave of the Nymphs* that Mithraists dedicated the equinoctial points to the seat of Mithras. In the same passage Porphyry says that Mithras rides the bull, which is Taurus, and bears the sword of Aries. Ulansey believes that Porphyry was confused when he was talking about the equinoctial points, which were in Aries and Libra in his own time, and that because of lack of knowledge of Mithraism. Porphyry tries to bring Aries to his report by himself.[144] This is another selective method used by Ulansey to ignore constellations other than those that fit his own framework.

Ulansey interprets the Mithraic torch-bearers as the symbols of equinoxes, particularly when equinoxes were at Taurus and Scorpio. His example for this proposal is a reconstruction of an artifact (CIMRM 335) in which there are two trees in the background in the same place as Cautes and Cautopates (the torch-bearers). In this image, on the tree on the right side there is a torch

[142] Ulansey, *Origins of the Mithraic Mysteries*, 52–53.
[143] Ulansey, *Origins of the Mithraic Mysteries*, 54–55.
[144] Ulansey, *Origins of the Mithraic Mysteries*, 59–62.

facing upwards and the sign of a bull, and beside the other tree there is a torch facing downwards and the sign of the scorpion. The tree on the right has leaves and the tree on the left has fruit. Ulansey does not give any further explanation why the torch-bearers are also wearing Phrygian caps.

By accepting the hypothesis that Roman Mithraism originated in Cilicia, Ulansey demonstrates the importance of Stoic philosophy in Tarsus, and later relates Tarsus to the pirates of Cilicia and the obsession of the Stoics with astronomy. Ulansey mentions how the Stoics believed in the great year of the universe (a cycle of time that was believed to be the age of the universe from beginning to end) and tries to give a number to this period. However, he admits that this notion was not confined to the Stoics and was well known to Iranians, Indians, and Babylonians. He argues that according to historians of science, the astronomic phenomenon of the precession of equinoxes was first discovered by the Greek astronomer Hipparchus in 128 BC and that his ideas reached the Stoics in Cilicia, who were already obsessed with astronomy. According to Ulansey the Stoics constructed a secret cult inspired by this discovery and developed an iconography based on the equinoxes at Taurus-Scorpio as a symbol of this cult using their advanced knowledge of the precession of equinoxes. Then, because the constellation Perseus is located above Taurus, Perseus became the killer of the bull. Ulansey suggests that the discovery of Hipparchus remained a secret for the early Mithraists of Cilicia and, because of the complexity of understanding the precession of equinoxes, the teachings of this phenomenon became available only to those admitted to the higher ranks in the cult.

Hipparchus' discovery is known among historians of science because of a report about this discovery by Ptolemy. Yet some historians even doubt that we can interpret what Hipparchus

says as a theory for the precession of equinoxes. Noel Swerdlow criticizes Ulansey for this reason.[145] Furthermore, knowledge of astrological ages, the great cycle of the universe, and changes of equinoxes could have been accessible to some ancient civilizations long before Hipparchus, as some other historians have argued.[146]

After all this, there remains another problem for which Ulansey must provide an answer. If Perseus is the god who kills the bull to show the end of the age of Taurus, and if this was because of the location of the constellation Perseus in relation to Taurus, which is visible to all, why did Mithraists choose Mithras as a substitute for Perseus and why are there no names for Perseus in Mithraic literature? Ulansey believes that the pronunciation of the name Perseus connects him to Persia and that the relationship between Mithridates VI of Pontus, who had Iranian ancestors, with the Cilician pirates makes Mithridates VI a hero for the Cilicians, who believed he was a descendant of Perseus. As evidence for this claim, Ulansey refers to coinage in which both Mithridates and Perseus appeared. According to Ulansey the Cilicians then took the name Mithras from the first part of the name Mithridates, which means literally 'the gift of Mithra.'

Ulansey also mentions a symbol in which a bull is being hunted by a lion as the symbol of the city of Tarsus. He sees this as an old sign for the fight between winter and summer when Leo was the solstitial constellation, citing Willy Hartner. According to Hartner's argument, which is very loose, the two constellations are visible in winter, but after the winter solstice, when the sun moves towards Taurus, and after the spring equinox, when it covers Taurus by its light, only the

[145] N. M. Swerdlow, review of *The Origins of the Mithraic Mysteries*, by David Ulansey, *Classical Philology* 86.1 (January 1991): 48–63.

[146] For example, see Giorgio De Santillana and Hertha von Dechend, *Hamlet's Mill: An Essay on Myth and the Frame of Time* (Boston: David R. Godine Publisher, 1977).

lion remains visible until the summer solstice.[147] Ulansey puts this sign in the category of the bull and scorpion, for which there was no astrological explanation in the time of the Stoics. Hartner never admits that the hunted bull, which is an important symbol for the Persians and can be seen everywhere in Persepolis, could carry the same meaning as the sacrificed Mithraic bull in relation to the sign of a passed astrological age; instead he pushes the evidence to accord with his own framework.

Ulansey identifies Mithras as a cosmic creator god who controls the cosmic order, because for the new cult that he introduces there is a vacuum of a deity higher than Helios or Sol. He even suggests that Sol Invictus, meaning "the unconquered sun," is another name for Mithras himself.[148]

While Ulansey's opinion about Mithras being the god of cosmic order, particularly taking the precession of equinoxes into account, is highly valuable and original, his ignorance of Persian and other eastern cosmologies and his tendency to push the data to accord with his Cilician originated model is questionable. As a comprehensive formula to interpret the Roman Mithraic iconography, his theory is also not convincing.

Ulansey also tries to maintain that the lion-headed god is a time god affiliated with Chronos and Aion because it possesses undeniable astrological attributes that are similar to what we see in iconography related to Aion. However, Ulansey still confuses this concept with his Mithras-Perseus model and suggests that the relationship between the lion-headed god and Mithras is like the relationship between Gorgon and Perseus in the story in which Gorgon, as a worthy rival to

[147] Ulansey, *Origins of the Mithraic Mysteries*, 91–92.
[148] Ulansey, *Origins of the Mithraic Mysteries*, 107.

Perseus, is killed by Perseus.[149] Again this is another problematic argument by Ulansey because there is no evidence in Mithraic iconography that Mithras fights with or kills the lion-headed god.

[149] Ulansey, *Origins of the Mithraic Mysteries*, 116–124.

Chapter 5 Mithras: The Celestial Charioteer

According to M. J. Vermaseren, a counter-clockwise swastika has been well preserved on a tauroctony scene found at Gigen, in modern Bulgaria, and is now in the national museum in Sofia (fig. 5.1, left).[150] In another Mithraic artefact from Italy (fig. 5.1, right), a clockwise swastika is depicted on a bronze statue along with two six-rayed star signs.[151] Despite the rarity of this symbol in Roman Mithraic artefacts, this instance should not be ignored.

Fig. 5.1. Left: Tauroctony found at Gigen. CIMRM 2247. Right: Mithraic artefact with swastika. CIMRM 765.

The swastika is a symbol used by several ancient cultures. The swastika as a sacred symbol is well-known in the east, found commonly in the Indus valley from around 2500 BC. It remains a religious symbol in Hinduism and Jainism, and is widely in use. It has also been found in bronze and iron age cultures around the Black Sea, Caspian Sea, and southwest Iran. In Buddhism it is known as *yung drung* and is the graphic representation of eternity. In Chinese and Japanese the word represented by the swastika in writing is a homonym of the number 10,000, and is

[150] CIMRM, Mon. 2247.
[151] CIMRM, Mon.765.

commonly used to represent the whole of creation. It is also present in Greek architectural motifs, cloths, coins, and artefacts dating back to the eighth century BC.

What makes the swastika interesting in the context of Mithraism is the wide use of this symbol in the east, particularly in ancient Iran and India, coinciding with the Mithraic tauroctony. Interestingly, the swastika was known as "the chariot of Mithra" in Iran.[152] In the *Mihr Yasht* of the Avesta, Mithra is described as having a celestial quadriga pulled by four heavenly white horses, who have front hoofs made of gold and back hoofs made of silver.[153] His chariot is decorated with the stars and his bright face is like the star Sirius.[154] He hears with his thousand ears and watches with his thousand eyes, always standing on the high end of the sky, restlessly, in the north, arising above the Alborz mountains.[155] He appears before the sunrise and after the sunset and touches both ends of the ball-shaped earth, and he watches everything between the earth and the sky.[156]

This leaves no doubt that the seat of Mithra and his quadriga is a celestial body in the sky close to the celestial north pole.[157] If we look out on a clear night sky in the northern hemisphere to the constellation Draco, we can recognize a clockwise swastika (figs. 5.2, 5.3). Its center is Zeta Draco (HIP83895), and it consists of four wings: 15 Draco-Pherkad-Zeta Ursa Minor, Eta Draco-Theta Draco-Edasich, 26 Draco-Gramium-Rustaban, and Omega Draco-Phi Draco-Upsilon

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[152] N. Bakhtvartash, *Neshan-i-Raz-Amiz*, 3rd ed. (Tehran: Fravahar Publications, 2001), 139; R. M. Ghiasabadi, *Avesta-i-Kohan* (Shiraz: Navid Shiraz, 2003), 36.

[153] James Darmesteter, trans., "Mihr Yasht," *Avesta – Zoroastrian Archives*, last modified November 23, 2012, http://www.avesta.org/ka/yt10sbe.htm, verses 112, 124, 125, 136.

[154] Darmesteter, "Mihr Yasht," verse 143.

[155] Alborz is now the name of a chain of mountains in northern Iran, but in ancient times the name referred to the whole chain of mountains from Pamir to Anatolia. Verse 143 of the *Mihr Yasht* identifies the location of the celestial body of Mithra in the north sky.

[156] Darmesteter, "Mihr Yasht," verse 95.

[157] Ghiasabadi relates Mithra to the north celestial pole and the four horses to the four bright stars of Ursa Minor pulling the sky around the pole once a day (Ghiasabadi, *Avesta-i-Kohan*, 36, 57).

Draco-Atlantis; and it has four stars as companions: Kokab, HIP78189, Etamin, and Epsilon Draco.

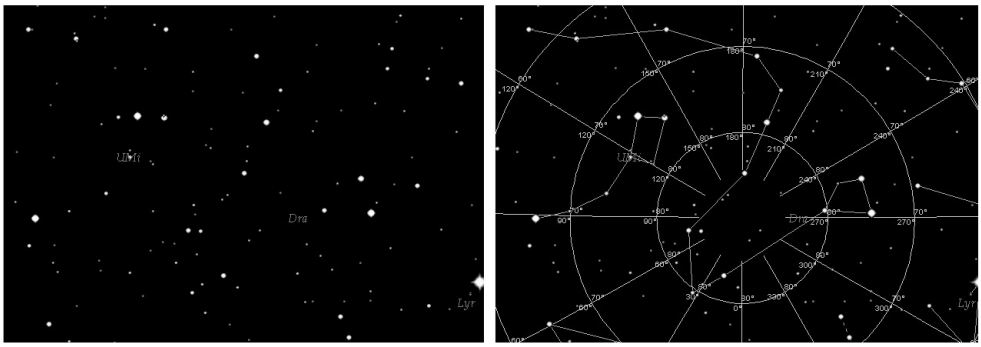

Fig. 5.2. Stars around the celestial north pole and the north ecliptic pole. Diagram by author.

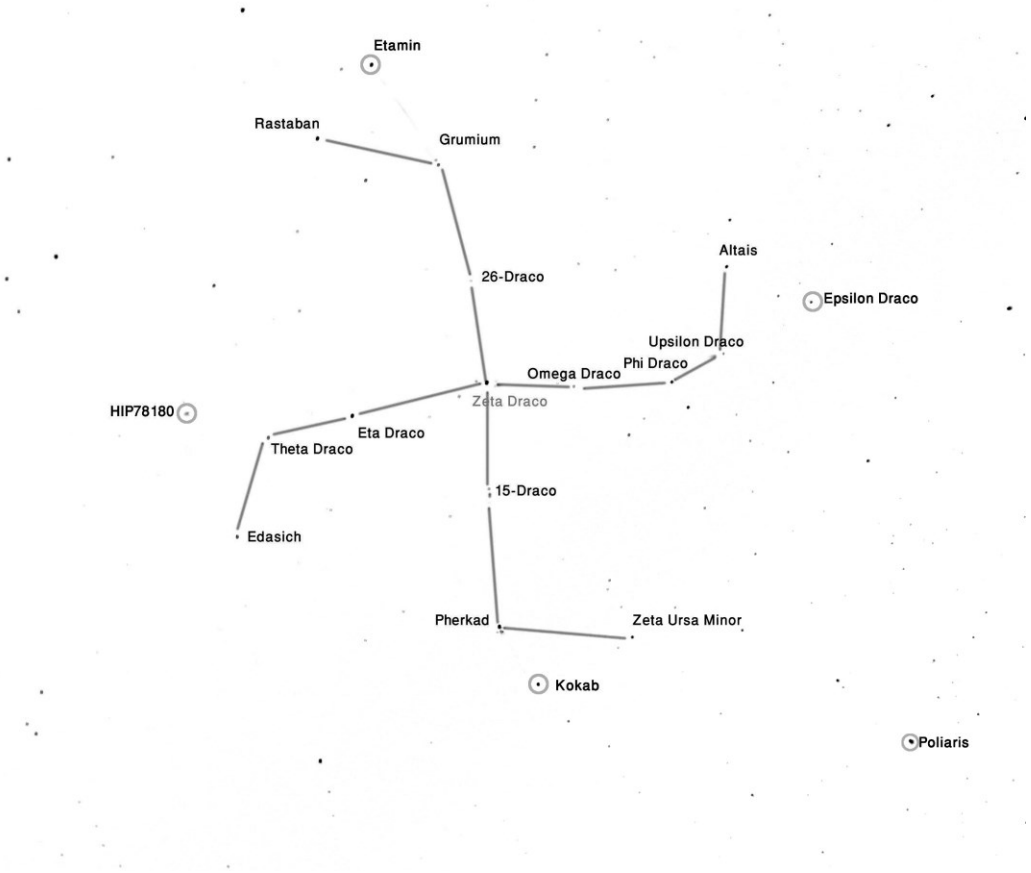

Fig. 5.3. The celestial swastika. Diagram by author.

The counter-clockwise swastika in the tauroctony scene of Gigen is the mirror image of the celestial clockwise swastika because the tauroctony is a symbolic projection of the celestial bodies. Other symbolic figures such as Taurus, Canis Minor, and Scorpio, which appear together in most tauroctony scenes, are also always projected as mirror images of the celestial constellations.

Zeta Draco is the closest star to the north ecliptic pole and the center of the zodiac in the star map. Because the axial precession of the earth takes place around an axis perpendicular to the earth's orbit around the sun, ecliptic poles serve as the precessional poles of the earth, too. Therefore, Zeta Draco is not only the star of the north ecliptic pole, but also represents the north precessional pole. It is the only star which never changes its path in the north sky; instead, the north celestial pole and other celestial bodies rotate clockwise around this point (almost one degree every seventy-two years). The ecliptic pole as the center of the zodiac would have been known to ancient civilizations, even if one does not admit that the precession was known until the Greek astronomer Hipparcus.

5.1 Symbolism in Tauroctony

As an observational consequence of precession, the constellations of the zodiac remain on the ecliptic but shift backwards almost one sign every two millennia (30 degrees every 2,160 years), which is known as an astrological age. Each astrological age is named after the zodiac sign(s)

rising or setting on the equinoctial points[158] in that age, representing the sign(s) of the spring or fall equinox. The precession forces all the constellations to change their position – except the swastika, which spins slowly round in its clockwise direction around Zeta Draco. In this great change the family of signs of the zodiac stays on the ecliptic while the family of the constellations representing the east rising stars or the celestial equator changes its members in each age. The latter family gains a new pair of zodiac constellations on its intersection with the ecliptic (which become the symbol of the age), accompanied by one other constellation which reaches the celestial equator at the same time. I suggest that this phenomenon provides a framework for decoding the secret of the cosmic imagery of the Mithraic tauroctony.

Here is the explanation: Knowing that, in addition to the planets and the moon and the sun having their cyclical movement, the cosmos appears to have its own great cycle rotating around the ecliptic pole, one can make a simple astrolabe in which the background image showing the constellations rotates around the center of the ecliptic circle (Zeta Draco), while the two circles of the ecliptic and the equator of the astrolabe remain fixed. This is the secret to simulating the cosmos during the great year: by rotating the astrolabe thirty degrees, or one sign of the zodiac, for each astrological age, one reveals the star map of that age. By rewinding this cosmic clock and tracking back the motions of the celestial bodies, one can see that the beginning of each age corresponds to the arrival of a new pair of zodiac signs at the intersecting points of the two circles of this astrolabe. Another constellation, which I call the "forerunner," also intersects with the equatorial circle and rises on the east just before the sign of the age. Surprisingly, the

[158] The points on the horizon where the sun rises/sets during the equinoxes, or the intersection of the ecliptic and celestial equator.

forerunner constellations of successive ages correspond to the constellations depicted in the tauroctony.[159]

The forerunner constellation of each age joins the new zodiac pair in the east, metaphorically overthrowing the sign of the previous age. Corvus comes with Leo-Aquarius, Crater with Cancer-Capricornus, Hydra with Gemini-Sagittarius, Canis Minor with Taurus-Scorpius, and Orion with Aries-Libra. More precisely, the brightest star of Orion, Betelgeuse (Alpha Orion), intersects with the celestial equator, overthrowing the brightest star of Taurus, Aldebaran (Alpha Taurus), commencing the age of Aries. This hypothesis might explain the importance in Mithraic iconography of particular constellations such as Canis Minor, Crater, Hydra, and Corvus.

The astrological concept behind this Roman imagery might even have been developed from a basic astrological framework derived from the east by the Greeks and Romans. The message of this image is the awareness of the coming of the new age, Pisces-Virgo (two fish and a virgin). This age commenced around 1 AD, when the edge of Pisces (the segment between Omicron Pisces and Eta Pisces) reached the equinoctial point (the intersection of the ecliptic circle and celestial equator) and Spica, the brightest star of Virgo, reached the celestial equator and rose in the east (fig. 5.4).

[159] Speidel contemplated their relationship with the equator in the ancient sky, but this set of constellations (Corvus, Hydra, Crater, Canis Minor, and Orion) never appears fully as the equatorial constellations. For example, Canis Minor should not appear in the taurectony according to Speidel's framework, but it does (Speidel, *Mithras-Orion*, 4-28). Ulansey also rejects Speidel's theory of Mithras-Orion because of this fact (Ulansey, *Origins of Mithraic Mysteries*, 22).

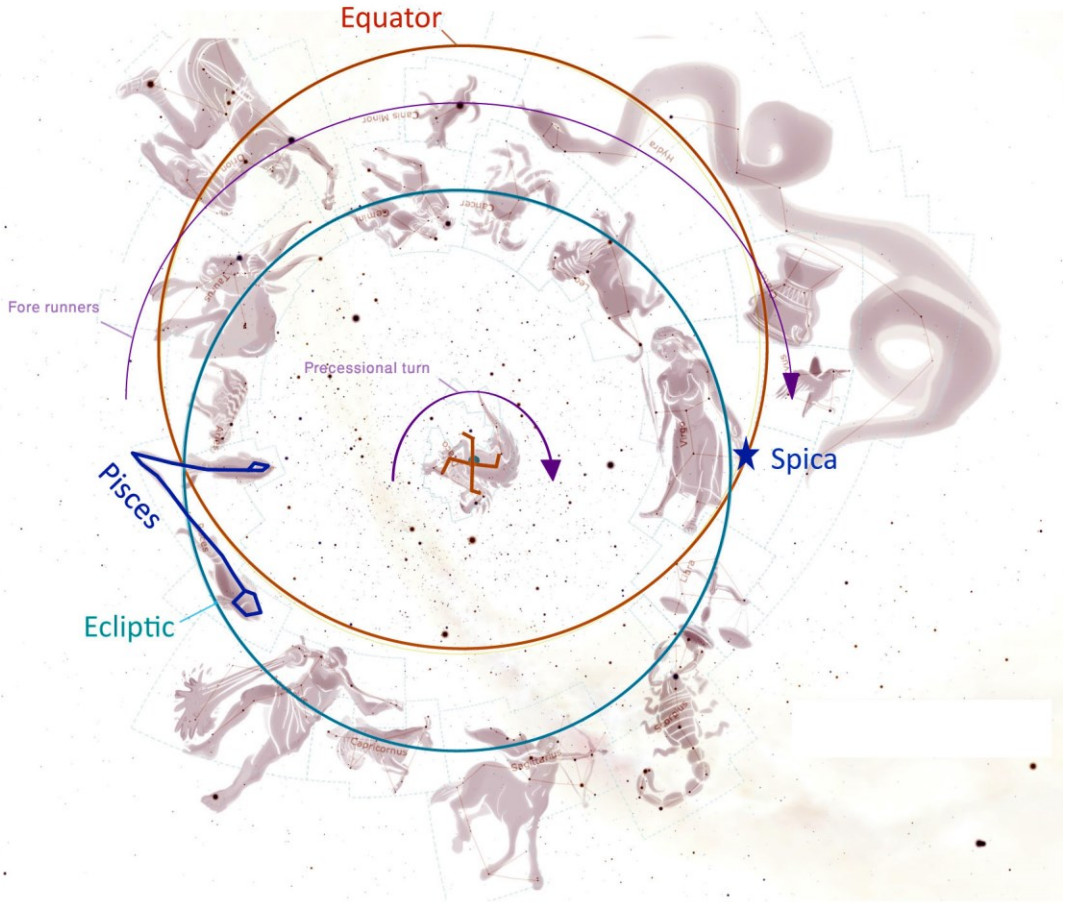

Fig. 5.4. The proposed Mithraic astrolabe. The precessional rotation in the sky of the northern hemisphere from 10,500 BC to 1 AD. Diagram by author.

The tauroctony proposes the start of this cosmic clock in the age of Leo-Aquarius (10,500 BC – 8,000 BC), represented by the constellation Corvus, and the only missing age in this imagery is Pisces-Virgo, which was yet to come at the time the tauroctony was created. In this binary system the great cycle of the world sums up to twelve millennia. The concept of the great year, or twelve thousand years consisting of six ages, half evil and half peaceful, is a Zurvanite belief in ancient Iran.

Zurvan is the concept of time, supreme god, and primordial creator deity in the Iranian cult of Zurvanism. The name *Zurvan* may be discerned on tablets dating back to the twelfth century BC.

Zurvan is referred to in two forms: *Zurvan Akarănak* (the god of infinite time) and *Dirang Xutăy* (the god of finite time). Iranian Pahlavi sources tell that material creation evolved from the infinite to four elements, then to a second form of mixing of these primary properties, and finally to the fully developed cosmos. This form exists for twelve thousand years after which the whole is taken up to the infinite again.[160] According to another report (from Eznik of Kolb, an Armenian writer of the fifth century), Zurvan wished to have a son, with the name Ohrmazd, who would create heaven, earth, and all beings. After offering sacrifice for a thousand years Zurvan began to ponder and doubt if he should wait. While doing so, Ohrmazd and Ahriman were conceived: Ohrmazd (Ahura-Mazda, the good god of Mazdean theology) from Zurvan's thousand years of sacrifice and Ahriman (evil) from Zurvan's doubt. In finite time and space, which exists for twelve thousand years, there is a battle between good and evil. There is also a treaty between Ohrmazd and Ahriman to keep the balance and prevent Ahriman from ruling for more than half of the ages.[161] The mediator[162] who keeps the treaty is Mithra.[163]

5.2 Chariot of Mithra

Now we can draw a scheme to understand the cosmic image of Mithra and its symbolism. Mithra is the god of cosmic order, the divinity who keeps the treaties, the god of vast pastures, who rises on the north sky, never sleeps, and watches everything with his thousand eyes. His chariot is the swastika driven by four white horses running smoothly through the ages of time.

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[160] R. C. Zaehner, *Zurvan: A Zoroastrian Dilemma* (Oxford: Clarendon, 1955), 266.
[161] Dark and light cycles are usually a thousand years long, for example the evil rule of Zahhak in Iranian myths.
[162] After the third century, Mihr (Mithra) was often presented as identical to the sun, where as in the Avesta he is clearly distinguished from the sun.
[163] Zaehner, *Zurvan*, 101.

If we look more carefully at the proposed celestial swastika, we can even draw the star map of the four horses of this constellation pulling the swastika (or the "cross" of the swastika) in its clockwise direction around the center, as shown in the figure below (fig. 5.5). The story of the four horses of Mithra is copied in the so-called *Song of Magians* preserved by Dio Chrisostom and cited by Cumont, Reitzenstein, Nyberg, and Zaehner.[164] According to Cumont, the myth is genuinely Magian in origin.[165]

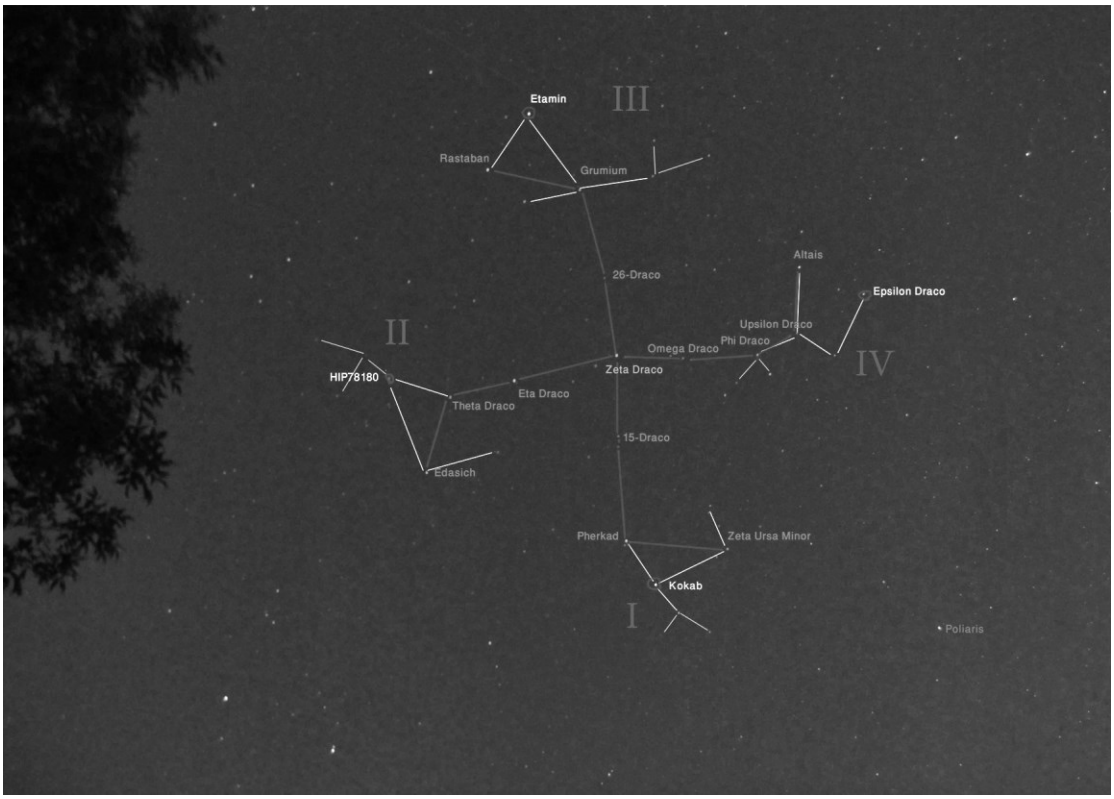

Fig. 5.5. The celestial quadriga. Diagram by author.

[164] Zaehner believes this song is evidence for the divinization of the four elements in Zurvanism and fits in a fourfold structure that repeats in this worldview. Zaehner, *Zurvan*, 226.

[165] Cumont believes the charioteer Zeus in this myth is the supreme god Zurvan, and the four horses represent the four elements (Zaehner, *Zurvan*, 227).

In Cumont's account of the story, "the supreme god drives a chariot drawn by four steeds which turn ceaselessly round in a fixed circle."[166] Zaehner states that: "The myth speaks of Zeus as the first and perfect charioteer of the perfect chariot. This chariot, which is the cosmos, is guided by the one charioteer and proceeds on its course throughout 'unceasing periods of eternity.' Men can only see the course of the sun and Moon, but 'can not grasp the movement of the whole.' Each horse is sacred to one of four mythical figures: Zeus, Hera, Poseidon, and Hestia."[167] Cumont goes on to describe the story in detail:

> The first [of these horses], which bears on its shining coat[168] the signs of the planets and constellations, is sturdy and agile and traverses the circumference of the fixed circle with extreme velocity; the second, less vigorous and less rapid in its movement,[169] wears a sombre robe, of which one side is illuminated by the rays of the sun; the third proceeds more slowly still; and the fourth turns slowly in the same spot, champing restlessly its steel bit,[170] whilst its companions move round it as round a stationary column in the center. The quadriga turns slowly and unimpeded, regularly completing its eternal course. But at a certain moment the fiery breath of the first horse falling upon the fourth ignites its mane, and its neighbor, exhausted by

[166] Cumont, *Mysteries of Mithra*, 116–18.
[167] Zaehner, *Zurvan*, 226.
[168] "Shining coat" may refer to the star Kokab – the brightest star among the four companion stars of the celestial swastika.
[169] The details of the story about the first horse being agile and rapid and the second horse being less rapid are possibly because the angle of 15 Draco-Zeta Draco-Eta Draco is smaller that the angle of Eta Draco-Zeta Draco-26 Draco. Thus it seems that the first horse wearing the shiny coat (Kokab) runs faster than the second horse that wears a sombre robe (HIP78180, the least bright star among the four companion stars of the celestial swastika).
[170] The suggested figure of the fourth horse turns in the same spot instead of continuing on the circular path of the celestial swastika.

its efforts, inundates it with torrents of perspiration. Finally, a still more remarkable phenomenon takes place, the appearance of the quartet.[171]

The details of this story coincide with the graphic and geometric forms of the horses in the proposed star map of the figure for the four horses of the swastika.

There is a bronze age statue of a charioteer found in Serbia with the symbol of the swastika, and some Roman artefacts also show four horse-heads shaping a counter clockwise swastika while the horses move the swastika in clockwise direction (fig. 5.6). Regardless of finding direct connections between the latter instances and the Mithraic cult, they tell us about the symbol of the swastika being accepted in the west as the four-horse chariot running clockwise around a stationary column.

Fig. 5.6. Left: A bronze age statue of a charioteer with three swastikas. City Museum of Vršac, "Archaeology." Right: Roman bronze brooch showing the four horses of the swastika. AntiquesNavigator.com, "Roman Bronze Zoomorphic Swastika Brooch."

[171] Cumont, *Mysteries of Mithra*, 116–18.

In Roman artefacts, Mithras is shown as the charioteer of the quadriga. In another image, Mithras spins the cosmic sphere in his hand, and in another he holds the cosmic sphere in one hand and turns the zodiac with the other (fig. 5.7). The latter image resembles a Greek mosaic of Aeon, the god of time, turning the circle of the zodiac.[172]

Fig. 5.7. Left: Mithras running the quadriga. CIMRM 943. Center: Mithras spinning the cosmic sphere (however, Cumont believes that this artefact is originally one of the Mithraic torch bearers mistakenly restored in the seventeenth century as the Greek god Paris holding a ball instead of an apple!). CIMRM 506. Right: Mithras turning the zodiac and the cosmic sphere. CIMRM 985.

[172] In early Christian imagery we often see the image of Jesus appearing in the middle of a zodiac with his twelve companions. The image of Christ also coincides with the cross and circle both usually represented in the depiction of the zodiac. Jesus could be the successor of Mithras, born when Pisces reaches the equinoctial point and when Spica, the brightest star of Virgo (the virgin) and the symbol of wheat or the house of bread (the literal translation of "Bethlehem"), reaches the celestial equator and rises in the east. The story of three Magi wearing Phrygian caps, like the three men in the tauroctony, sounds Mithraic: their following the star in the east towards Bethlehem to inaugurate the birth of Jesus could be a story about the astronomical observation of Spica in order to determine its arrival on the celestial equator to announce the beginning of the age of Pisces. This is the age in which mankind was saved and gifted a loaf of bread and two fish by their virgin-born savior.

This fact might be a tenet of Roman Mithraism: the wonder of the new astrological age which is the last age of the universe. It represents the problem of finding a new mythical hero for the age of Pisces, in which the god Mithras is incarnated. It is the age of the final battle between good and evil.

Chapter 6 Mithras: The God of the Cosmic Cross

In Roman culture the four-horse chariot, as the possible astrological symbol of the ecliptic, metaphorically serves the sun, which is the prime heavenly body traveling on the perimeter of the ecliptic, as well as the other planets. However, in the Avesta the four-horse chariot serves only Mithra and is not borrowed by the sun or the other planets in Iranian mythology.

Another important problem that has been surprisingly ignored in the study of the Mithraic iconography is the fact that in the tauroctony and several other artifacts Mithras is usually shown as partly or fully encompassed by the zodiac, which means he is seated in the ecliptic pole. A perfect example is the tauroctony scene found in a Mithraeum in the city of London, now in the Museum of London. In this artifact, the zodiac is depicted in a perfect circle encompassing the bull-slayer and the two torch-bearers so that Taurus is aligned with the bull and Scorpio is aligned with the scorpion in the scene (fig. 6.1). This setting suggests a celestial alignment and some coordination references according to which the bull-slayer is possibly located among the celestial bodies. I propose that the bull-slayer Mithras could be a Roman creation that elaborately represents the star map of the ecliptic pole.

Fig. 6.1. Tauroctony of London: The alignment of Taurus and Scorpio on the encompassing zodiac corresponds to the position of the bull and scorpion in the scene. Photograph by author.

In the tauroctony, the bull-slayer always turns his head away from the bull, while holding a dagger in his right hand and bending his right knee. His cape is always raised up, often having the mark of the stars. The upper-body proportions of the bull-slayer are relatively similar in tauroctony scenes. The relative stability of the figure of the bull-slayer in the tauroctony, despite the wide geographical distribution of the iconography, suggests the possible existence of a universally visible physical phenomenon, like a constellation, to which this figure refers.

The coincidence of the tauroctony of Gigen, in which the symbol of the broken cross is associated with the bull-slayer, also adds to this assumption that the bull-slayer succeeds the

symbol of the broken cross and represents the ecliptic pole in Roman Mithraic iconography (fig. 6.2).

Fig. 6.2. Tauroctony of Gigen with a broken cross in the middle and two crosses on either side. CIMRM 2247.

I analyzed the image of the bull-slayer in various Mithraic artifacts by juxtaposing the stars of the ecliptic in the first century, in an orientation in which Taurus is on the upper right side and Scorpio is on the lower left side, as the tauroctony suggests. The analysis shows that the bull-slayer figure of Mithras can match the star map of the north ecliptic pole as shown in figure 6.3. Interestingly, in this alignment Corvus, Crater, Leo, Hydra, Canis Minor, Taurus, Scorpio, and the proposed constellation of the bull-slayer are in the same order relative to their astrological symbols in the tauroctony (fig. 6.13).

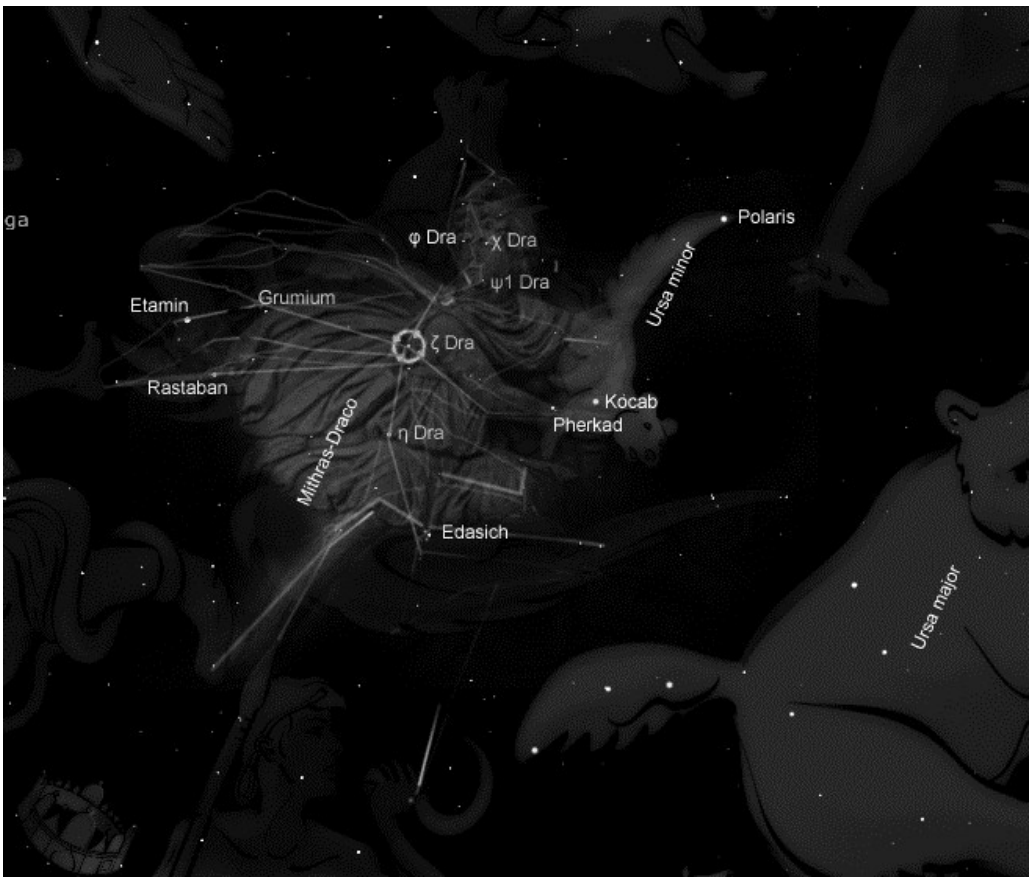

Fig. 6.3. Proposed constellation of Mithras on the north ecliptic pole. Diagram by author.

In the "Mithras Liturgy," a text in the *Great Magical Papyrus* of Paris, the god Mithras is invoked several times. Although it is not a first-hand Mithraic text, the Liturgy is commonly considered as material reworked for the syncretic tradition of magic in the Hellenistic and Roman era, contemporaneous to Roman Mithraism.[173] Part of this text reads: "and the earth shaking, and [Mithras] a god descending, a god immensely great, having a bright appearance, youthful, golden-haired, with a white tunic and a golden crown and trousers, and holding in his right hand a golden shoulder of a young bull: this is the Bear which moves and turns heaven around, moving upward and downward in accordance with the hour. Then you will see lightning-

[173] Alberecht Dieterich, *Eine Mithrasliturgie* (Berlin: B. G. Teubner, 1910), 15.

bolts leaping from his eyes and stars from his body."[174] The bear, which turns heaven around in accordance with the hour, is thus Ursa Minor, the celestial body that marks the north equatorial pole (in the first century the north equatorial pole was slightly away from Polaris and was situated on the back of Ursa Minor, between its tail and head).

This text, which has remained puzzling and confusing to this date, seems acceptable on the interpretation proposed in this paper. The "golden shoulder" of a bull could be the star Kokab and, based on my reconstruction, the celestial bull-slayer holds Ursa Minor in his right hand. The bull-slayer then pushes the dagger in the opposite direction to the hourly turn of the celestial bodies, and the force of the bull-slayer's right hand is a force in the direction of axial precession around the north ecliptic pole (i.e., Mithras' right shoulder, located on Zeta Draco in this model) (fig. 6.3). The snake and two bears depicted in the center of the zodiac in the ceiling of the Mithraeum at Ponza[175] could also refer to Ursa Major, Ursa Minor, and Miras-Draco (fig. 6.4).

[174] Meyer, "The Mithras Liturgy," 456.
[175] Vermaseren, *The Mithraeum at Ponza* (Leiden: Brill, 1974).

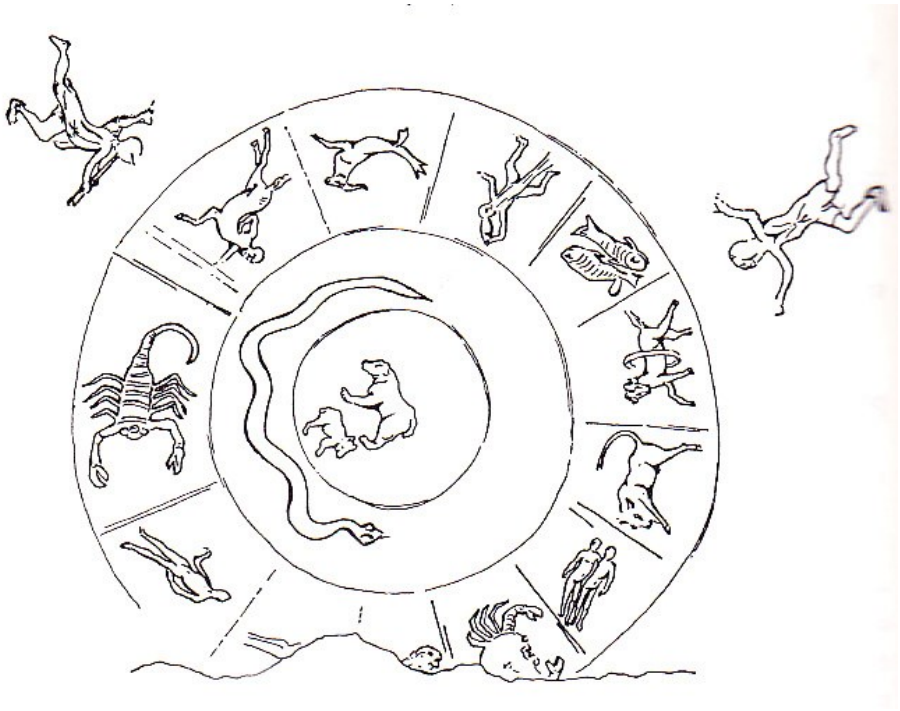

Fig. 6.4. The ceiling graphic in the Mithraeum at Ponza, showing a snake and two bears in the center of the zodiac. Vermaseren, *Mithraica 2: The Mithraeum at Ponza* (Leiden: Brill, 1974), 9.

In some tauroctony scenes, a bow shape of clouds instead of the zodiac often encompasses the bull-slayer at the top of the scene. The celestial dust or clouds are commonly representative of the galactic plane or the Milky Way. In Greek mythology this is described as the bridge or road to mythical Mount Olympus, the home of twelve Olympian gods, and the path of ruin made by the chariot of Helios.[176] In the reconstruction below of the celestial bull-slaying scene, the Milky Way also bows over the head of the celestial bull-slayer (figs. 6.9, 6.13).

[176] A. H. Fison, *Recent Advances in Astronomy*. *The Victorian Era Series* (Chicago: H. S. Stone, 1899), 49.

6.1 Leontocephalic Man

Among Mithraic artifacts there is another significant character that seems to be as important as the bull-slayer. The details and attributes of this mysterious figure are even more complicated to interpret than the other figures, and therefore its identity remains highly controversial; however it is crucial to decoding the mystery of Mithraism. This figure is a naked man with a human body and the head of a lion, opening his mouth to give a frightening impression, entwined by a snake. He usually has four wings and holds one or two keys and a scepter in his hand. He often has a thunderbolt, the sign of Thor, the thunder god, and in some instances he is standing on the cosmic sphere (fig. 6.5). This figure is restricted to Mithraic iconography and has almost the same importance as the tauroctony.

Fig. 6.5. Mithraic leontocephalic man. CIMRM 543, 312.

Cumont has identified this figure with the Iranian god Zurvan because of direct symbolic references to the concept of time in this figure, and suggests it to be of Egyptian origin and to correspond with the Greek Aion and/or Greco-Phoenician Kronos.[177] Like other interpretations by Cumont, this view was generally rejected by anti-Cumontian scholars. The identity of the lion-headed figure of Mithraic iconography was treated in several of the papers of the first and the second conferences of Mithraic studies in 1971 and 1975. Cumont's view is maintained by Vermaseren, although Vermaseren also describes an Egyptian influence on the Hellenistic era.[178] A. D. H. Bivar relates the lion-headed figure instead to the Babylonian gods of death and the underworld, Nergal and Moloch.[179]

Despite the obvious astronomical symbolism in this figure and its attributes of a time god, finding its meanings and true origins is one of the most controversial problems in Mithraic studies. This figure also shares some elements with the Roman god Janus. Janus is also a time god, holding keys and a scepter. He is the god of beginnings, transitions, and ends, usually depicted with two heads and also known as quadrifrons or "four-headed."

On the other hand, Iranian Mithra always has a companion named Varahran, or Bahram in modern Persian, who is a boar-headed or possibly lion-headed warrior, fighting for Mithra in front of his celestial four-horse chariot. His weapon is thunder, and thus he is also known as the Iranian thunder god or the god of eternal fire (the sacred fire caused by the thunder, known as *âtaxş-i-varahrân*).

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[177] Cumont, *Mysteries of Mithra*, 121.
[178] Vermesaren, "Magical Time God," 446–56.
[179] Bivar, "Mithra and Mesopotamia," 289.

In fact, this figure borrows symbolic elements from several cultures. As a unique Mithraic icon, it is the most syncretic creation in Mithraic iconography. In some instances the figure appears with a human head similar to Mithras (fig. 6.6) and often the zodiac symbols are portrayed on his body. Despite the terrifying appearance of the lion-headed form, this figure cannot be a demon; on the contrary, he could be another reincarnation of Mithras or another mythological and astrologic reference to the celestial seat of the godhead.

Fig. 6.6. Mithraic human-headed figure entwined by a snake. CIMRM 777.

If the bull-slayer is positioned in the ecliptic pole he should at the same time represent Draco. I suggest that the serpent around this figure, who entwines his body by six turns, is Draco. The constellation of Draco is usually drawn as a snake with six turns since its astral geometry is a

continuous line with thirteen segments (six pairs of stars) (fig. 6.7). The figure might also represent the celestial broken cross by having four wings on its back, and represent Janus and Aion, the god of the astrological ages, by holding the keys and a scepter. The lion head with exposed teeth is possibly the reproduction of the Persian Mithra's warrior companion, Varahram, who is often mentioned as an iron-toothed beast. The broken cross is also associated with the lion in Iranian artifacts dating back to the first millennia BC, for example in the golden cups of Hasanlu and Kelardasht.

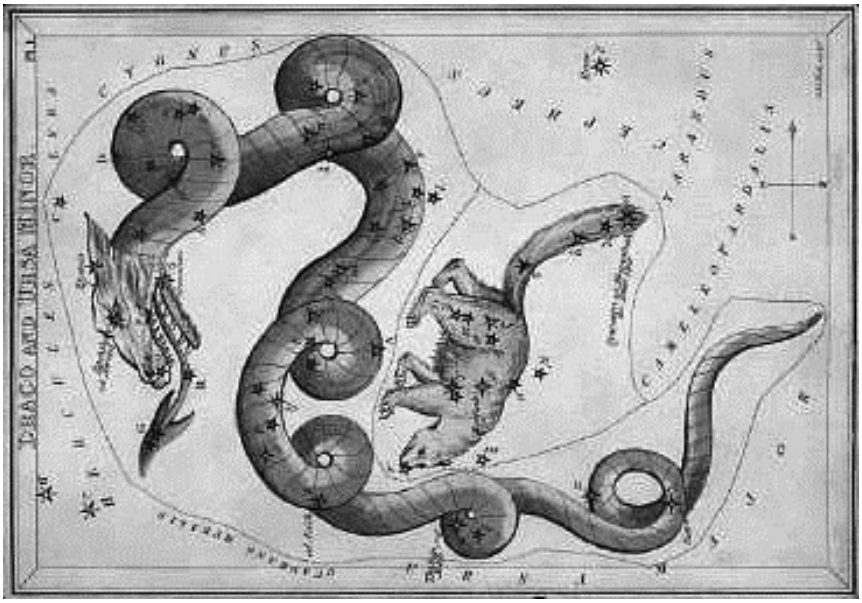

Fig. 6.7. Draco in a set of constellation cards published in London c.1825. Draco is graphically represented as a snake with six turns. Wikipedia, "Sidney Hall – Urania's Mirror – Draco and Ursa Minor."

It is possible that the lion-headed figure plays the role of the gatekeeper of heaven standing on the ecliptic pole, the point in the sky that seemed to be the center of the firmament around which the celestial bodies precessionally revolved. Origen quotes Celcus: "These things are obscurely hinted at in the accounts of the Persians, and especially in the mysteries of Mithras, which are celebrated among them. For in the latter there is a representation of the two heavenly

revolutions—of the movement, viz., of the fixed stars, and of that which take place among the planets, and of the passage of the soul through these. The representation is of the following nature: There is a ladder with lofty gates, and on the top of it an eighth gate."[180] The description of eight levels of ascension, instead of the seven known planetary levels, is of importance here. If there was thought to be an eighth orbit in the cosmos and the fixed stars to also revolve on a pole (i.e., the ecliptic-precessional pole), then that pole might have been regarded as the connection point of the celestial globe to its beyond. The lion-headed god possibly holds the key to the eighth gate by standing on top of the celestial globe.

6.2 The Question of Axial Precession

Mithraic symbols of the broken cross and bull-slayer can merely refer to the ecliptic pole without taking into account the importance of this point as the center of axial precession. Earlier I suggested that Iranian Zurvanite theology draws a plausible framework for understanding the role of Iranian Mithra in keeping the order of the universe during the six ages of time, a period that is believed to be twelve thousand years in duration. I also suggested a star map for the celestial quadriga on the ecliptic pole that runs the cosmos in the direction of the axial precession around Zeta Draco, or the star of the north ecliptic pole (i.e., the same as the north precessional pole). Here the bull-slayer seems to play the same role (turning the cosmos in the precessional direction) by landing the dagger on the bull with his right hand. This hand is one of the four arms of the celestial broken cross that lies between the north ecliptic pole and the north equatorial pole.

[180] Celsus, cited by Origen in Frederick Crombie, *Origen of Alexandria: Against Celsus (Contra Celsum)* (Ex Fontibus, 2013), 6.22.

In the tauroctony scene of London, Cautes, the torch-bearer who holds the torch raised up, points the torch to a place in the zodiac between Leo and Virgo; Cautopates, the torch-bearer who holds the torch downward, points to a place between Aquarius and Capricorn. This might support my suggestion about the Mithraic tauroctony symbolizing the concept of the great time of six astrological ages beginning in the age of Leo and ending after Pisces. In this artifact the two quadrigas at the top corners probably belong to Sol and Luna, as their seat is on the zodiac. But what is important here is the direction in which Sol and Luna run the quadriga on the zodiac or the ecliptic. The direction shown on this iconography is a precessional direction that is opposite to the course of the planets on the zodiac (fig. 6.8).

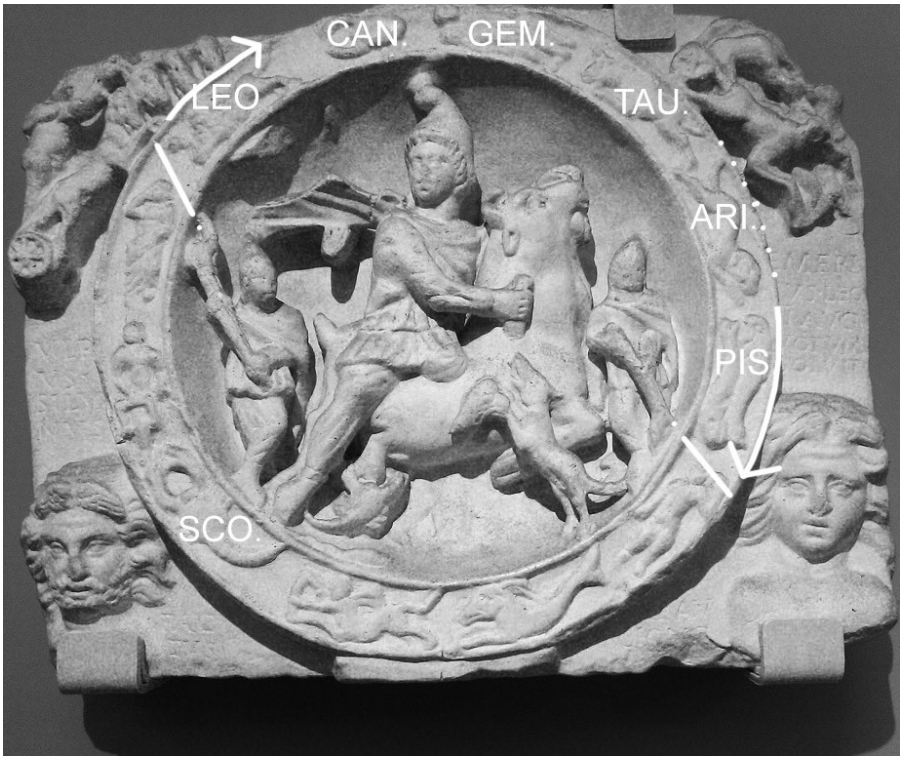

Fig. 6.8. Tauroctony of London: The positioning of torches and the direction of quadrigas relative to the symbols of the zodiac. Photograph by author.

The path of the planets is not affected by the axial precession. In fact, ancient civilizations could more easily find out about the axial precession (also known as the precession of "equinoxes") by noticing the displacement of the celestial bodies relative to the equinoctial and solstitial points of the horizon, towards which many temples and landscape marks used to be oriented in several ancient cultures. This replacement is one degree every seventy-two years, which is a considerable change in the rising point of a star. According to this understanding, one can imagine that the sun and the planets never change their paths on the celestial bodies and stay on the ecliptic, and the axial precession only shifts the equinoctial and solstitial references on the ecliptic in the reverse direction. This way one could assume that the precession takes place around the ecliptic poles. That might be the reason Sol and Luna are running the chariot on the precessional direction on the zodiac, since the apparent effect of precession is understood by the course of planets relative to the fixed stars on the ecliptic. Understanding the affiliation of Mithras with Sol or Helios is possible by understanding the interpretation of the axial precession by the Romans.[181]

[181] The birth of Christ coincides with the commencement of the age of Pisces or the two fish, when the seat of the sun on the ecliptic in equinoxes passes from Aries (the lamb) to Pisces and from Libra to Virgo (the virgin). According to the story of the last supper in Luke's gospel, Jesus sent two disciples to the city to find a place to prepare for Passover. He tells them they will meet a man who carries a pitcher of water, and if they follow him he will show them a house in which there is a large furnished room on the upper floor. In astrological symbolism, the man carrying a pitcher of water is Aquarius. Following Aquarius to find a large room on an upper floor could be interpreted metaphorically as passing from Aries to Pisces towards Aquarius in precessional direction. The most noticeable observational reference to track this shift was the precessional arrival of Spica (called "the house of wheat" or "the house of bread," literally translated as "Bethlehem") on the equator and its rise on the cardinal "east." This is also portrayed by Christians as three magi wearing Phrygian caps, who made an astronomic observation.

Other parallels include the following: Jesus has twelve disciples, like Mithras encompassed by the twelve signs of the zodiac, and one disciple betrays him on the night of Passover. The iconography of the crucifixion of Jesus in early Christian art is a relatively repetitive scene showing Jesus on a cross either accompanied by two other crucified men, or often two angels, on either side. The sun and moon are usually demonstrated on the upper left and right corners of the crucifixion scene, like Sol and Luna in the tauroctony. There are even examples of Christian art portraying Jesus in the center of the zodiac (fig. 6.10).

In the tauroctony of Gigen (fig. 6.2), where the broken cross is shown next to the bull-slayer, there are two other cross signs, one on each side next to Cautes and Cautopates, the two torch-bearers who stand on two sides of the bull-slaying scene with "crossed" legs. These crosses possibly represent the intersections of the ecliptic and the celestial equator as usually shown on the celestial globe. These intersections are the equinoctial points of the ecliptic. According to the third century neoplatonist Porphyry, the equinoxes are assigned as the seat of Mithras.[182] Ulansey also suggests that the two torchbearers represent the vernal and autumnal equinoxes. The two crosses and the cross-legged figures might otherwise represent the two intersections of the Milky Way and the ecliptic. According to George Latura, two cross intersections are visible in the form of a cross where zodiacal light on the ecliptic intersects with the Milky Way. He suggests that these celestial references were well known among the Greeks and Romans and were referred to as the "visible X in the sky" by Plato.[183]

6.3 The Mithraeum as a Symbolic Precessional Planetarium

The architecture of Mithraea is also of a unique and stable design. A Mithraeum is commonly a basilica-type, vaulted, cave-like dark chamber portraying the tauroctony at one end. Porphyry reports that the Mithraeum is designed like a cave because the cave conveys an image of the cosmos.[184] Regardless of the prior existence of the possible graphics of stars and cosmos on the ceiling, the most dominant element of the Mithraeum is the bull-slayer at the center of the

[182] Porphyry, *Cave of the Nymphs*, 6.
[183] G. B. Latura, "Plato's Cosmic X: Heavenly Gates at the Celestial Crossroads," *Ancient Cosmologies and Modern Prophets: Proceedings of the 20th Conference of the European Society for Astronomy in Culture* (Ljubljana: Slovene Anthropological Society, 2013), 257–64.
[184] Porphyry, *Cave of the Nymphs*, 6.

corridor and the arch on top of the tauroctony portraying the zodiac or the celestial clouds aligned with the vault of the Mithraeum. Most of the rituals practiced by Mithraists are unknown, but what is important for our purposes in the practice of the cult in the Mithraeum is the three dimensional space imitating the revolving cosmos, where the godhead on the ecliptic pole takes the focal point encompassed by the ecliptic (fig. 6.11).

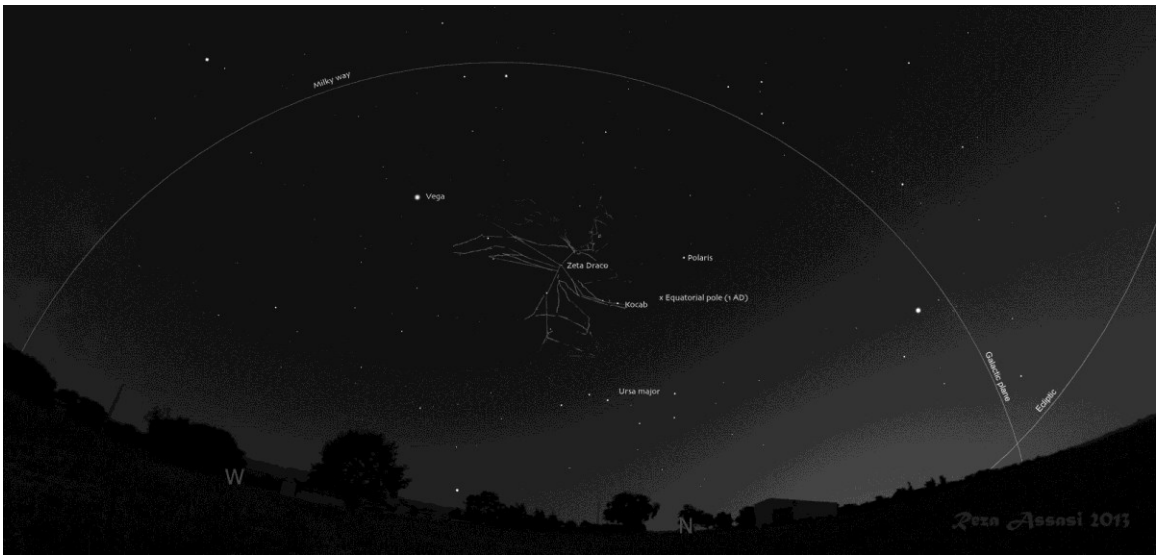

Fig. 6.9. Reconstructed view of the proposed constellation of Mithras in the north, below the galactic plane. Diagram by author.

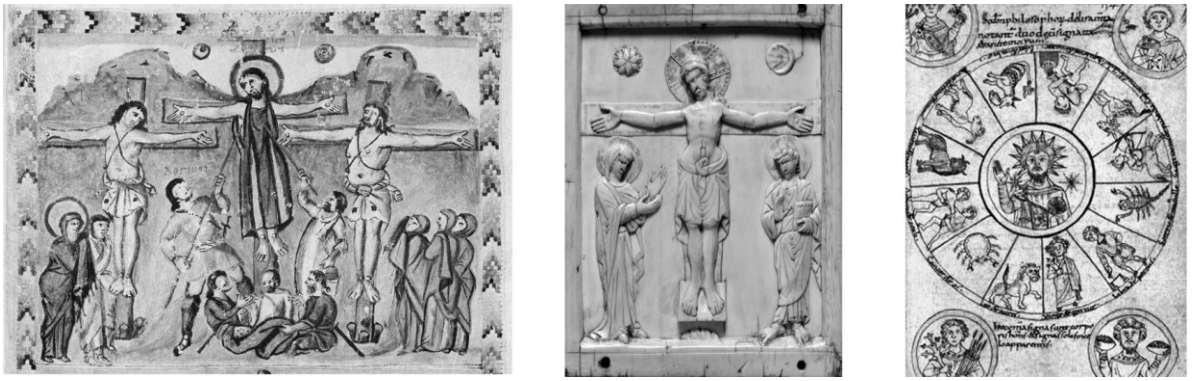

Fig. 6.10. Left, center: Medieval art demonstrating the crucifixion of Jesus. Right: Jesus encompassed by the zodiac. Wikimedia, “Meister des Rabula-Evangeliums”; Wikimedia, “Crucifixion”; Barbara Silver Etykiety, “Christ-Helios w centrum Zodiaku,” *minos-minal-omfalos.blogspot.ca*.

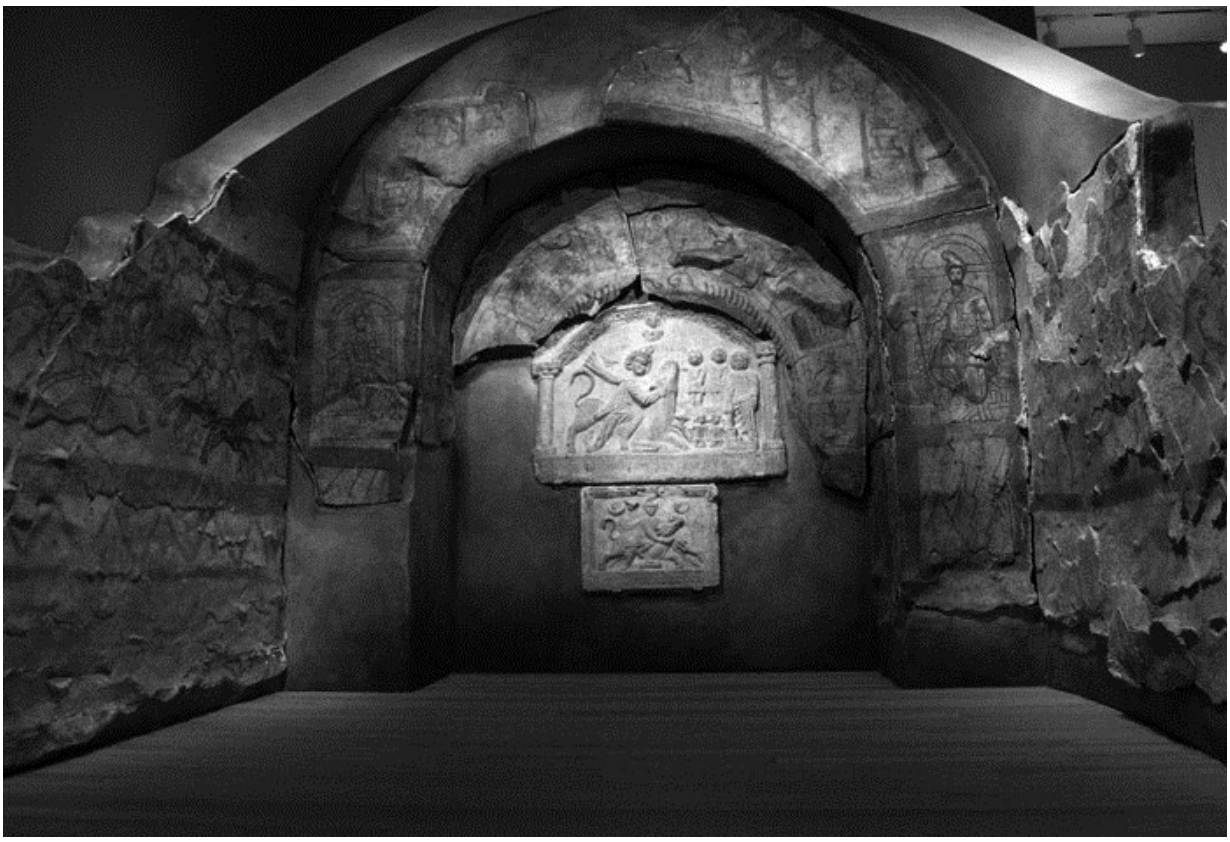

Fig. 6.11. Mithraeum excavated at Dura-Europos, in modern Syria, with tauroctony at the center encircled by the zodiac. Photograph by author.

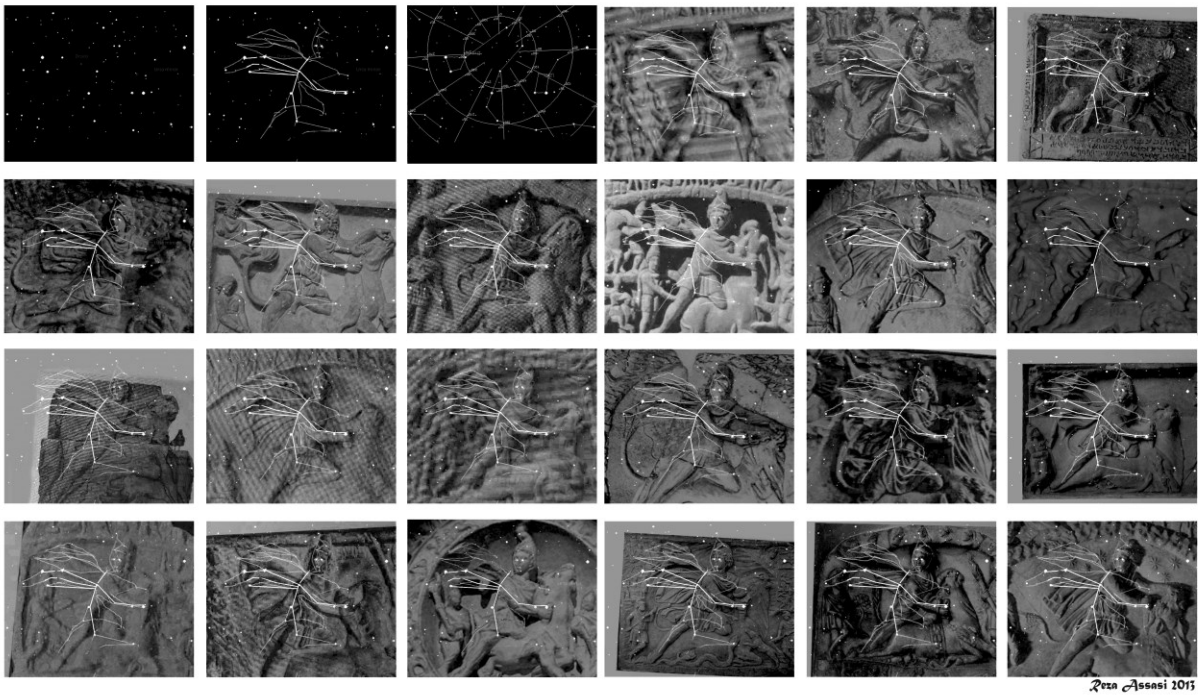

Fig. 6.12. Analysis of tauroctony artefacts shows that the image of a bull-slayer Mithras corresponds to the geometry of the star map of the north ecliptic pole in a particular alignment. Diagrams by author.

Fig. 6.13. Mithraic cosmogram: Reconstructed astronomical model showing the ecliptic, the equator, the Milky Way, and celestial bodies around Mithras relative to the equinoctial and solstitial points in the beginning of the first century AD. Diagram by author.

Chapter 7 Dome of Heaven

The cross of eternity appears in Persepolis and Naghsh-e-Rostam, in Iran, where four tombs of the Achaemenid kings were built in the center of huge crosses carved in the rocks of a cliff (fig. 7.1). This site is a few kilometers northeast of Persepolis, where other identical cross tombs are incurved on the cliff facing the royal complex. In Naghsh-e-Rostam in front of the four crosses there is an enigmatic Achaemenid structure, the function of which remains a mystery. The structure is commonly called Kaba-i-Zartosht, a fourteenth century name meaning "the cube of Zoroaster,"[185] but its original name is unknown. It dates back to the fifth century BC and seems to be a copy of an earlier Achaemenid structure in Pasargad of which only one side has survived and which is believed to have been constructed a few decades before Kaba-i-Zartosht.[186] Both structures are constructed with white limestone. Their form is a cube with square plan 7.25m wide and 12.5m high. The door of the chamber was accessible by a thirty-step stone staircase. On the other three facades of the building there are recessed objects of black limestone like false windows. This configuration, taking into consideration the cross tombs of the Achaemenid kings, shows the importance of the cross shape, which is repeated in negative form on the facades of this building by the locations of the four square false windows.

[185] Gerd Gropp, "Ka'ba-ye Zardošt," in *Encyclopaedia Iranica, Online Edition*, last modified April 19, 2012, www.iranicaonline.org/articles/kaba-ye-zardost.

[186] Richard N. Frye, "Persepolis Again," *Journal of Near Eastern Studies* 33.4 (1974): 383–86.

Fig. 7.1. Naghsh-e-Rostam. Photograph by author.

This structure also contains important inscriptions from the eighth century and later written by the Sassanid King Shapur I (241–272 AD) and the Sassanid priest Kartir in Middle Persian, Parthian, and Greek. The inscription of Shapur I contains descriptions of his Roman wars in which he claims to have defeated and killed Emperor Gordian III and captured Emperor Valerian in a battle.[187] Some Sassanid kings also carved seven bas-reliefs on in this site, portraying scenes such as Shapur I's victory over Roman emperors and Bahram II's fight with the Roman enemy. In two other Sassanid bas-reliefs Ardeshir I and Narseh are shown receiving the kingship ring, which is a Mithraic symbol of oath-taking.[188]

[187] André Maricq, "Classica et Orientalia par André Maricq: 5. Res Gestae Divi Saporis," in *Syria* 35.3/4 (1958): 295–360.

[188] Warwick Ball, *Rome in the East: The Transformation of an Empire* (New York and London: Routledge, 2000), 120.

The site remained highly important for the Persian Sassanid kings even eight centuries after the construction of the tombs and the cubic building, regardless of whether the Sassanids were aware of the original concepts behind the design of the Achaemenid structures. Finding answers for the highly controversial questions about the purpose of Kaba-i-Zartosht is beyond the scope of this research, but a comprehensive study of this structure must consider its architectural symbolism in relation to ancient Iranian cosmology.

The symbol of the cross of eternity has flourished in the conception of the Persian royal gardens. A Persian royal garden is called *pardis*. This Old Persian word appeared as *pairi-daeza* in the Avestan language,[189] was borrowed by the Greek language in the form of *paradeisos* (παράδεισος), and later appeared in Latin in the form of *paradisus* as early as the fourth century BC.[190] This word is the root of French *paradis* or the English "paradise," referring to heaven or the Garden of Eden. In the Quran heaven was also called *ferdows* (from the Persian *pardis* adopted into Arabic), described as a garden full of trees under which canals of water run and in which those who inherit it will abide eternally.[191] The plan of the Persian garden is in fact the reflection of the concept of heaven on earth: a landscape cosmicized by the cross of eternity.

Interestingly, one of the uses of four-arch structures in Iranian architecture in the Islamic era is the building in the center of the garden, incorporated on the intersection of the two perpendicular axes.[192] The Persian gardens in modern Persian are also called *char-bagh*, meaning "four

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[189] Oxforddictionaries.com, "Paradise," 2014 online edition, accessed September 18, 2014, http://www.oxforddictionaries.com/definition/american_english/paradise.

[190] Penelope Hobhouse, Erica Hunningher and Jerry Harpur, *Gardens of Persia* (Carlsbad: Kales Press, 2004), 7–13.

[191] Quran 18:107, 23:11.

[192] In the more elaborate form four small chambers are introduced into the four corners of the structure forming eight spaces encompassing the main hall in the center. This form is called *hasht-behesht*, meaning "eight heavens" in Persian.

gardens," referring to the quadrilateral layout of the garden divided into four smaller parts by a cross of sidewalks, usually accompanied with flowing water (fig. 7.2).

Fig. 7.2. A 17th century Persian carpet showing the concept of a Persian garden. *Electrummagazine*, "Isfahan Garden Carpet."

The Taj Mahal (fig. 7.3, 7.4), an example of Mughal architecture in India, uses elements of Persian architecture, reflecting the concept of Persian gardens.[193] The Taj Mahal in fact is a mausoleum within a Persian garden built by the Mughal Emperor Shah Jahan in memory of his wife, Mumtaz Mahal, a woman from the Persian nobility.

[193] Parween Hasan, review of *Mughal Architecture: Its Outline and Its History*, by Ebba Koch, *The Journal of Asian Studies* 53.4 (November 1994): 1301.

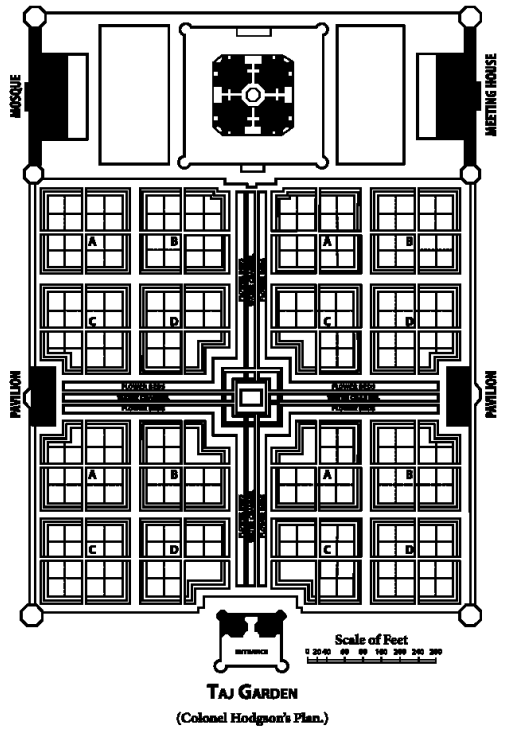

Fig. 7.3. The plan of the Taj Mahal. The Taj Mahal is designed according to the concept of Persian gardens. Wikipedia, "GreatMughalsTM (complete)."

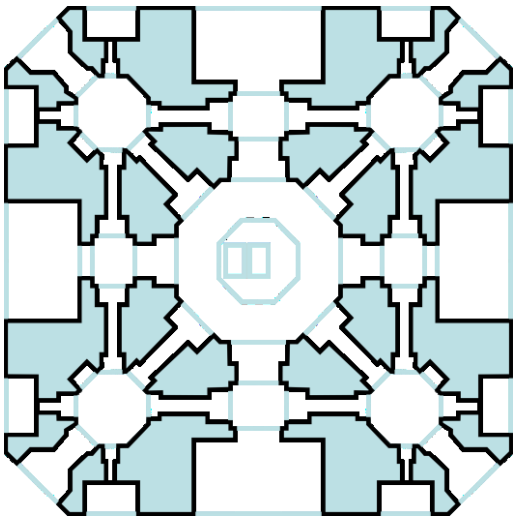

Fig. 7.4. Plan of the mausoleum of Mumtaz Mahal in the Taj Mahal. Wikipedia, "Taj Floor Plan."

7.1 Chartaqi

Now we can get back to the chartaqi, which symbolically represents the dome of heaven. In the chartaqi, a dome is constructed on top of four pillars on a square footprint and a cross plan, oriented towards the equinoctial and solstitial points of the local horizon. I should elaborate on the problem of the importance of the solstitial and equinoctial points in this cosmological orientation.

Primitive cultures were aware of the path of the sun on the ecliptic and pinpointed the maximum and minimum points of the travel of the sun on the horizon, along with the middle point, which we call the equinoctial and solstitial point. These points remain true reference points, regardless of the shape of the local horizon or the latitude of observation. The stars rising and setting on these points were also tracked according to these points, as we call them the tropic of Cancer, tropic of Capricorn, and the celestial equator. The early awareness of axial precession was probably made possible by noticing the shift of stars marked on the celestial equator or the other celestial tropical references. This shift, which is one degree every seventy-two years, is noticeable even by one generation. The awareness of axial precession becomes even more probable when a sedentary society build in a way that aligns landscape or architectural structures with rising points of the stars and the sun. As a result the stars shift while the sun maintains its solstitial and equinoctial references. Thus the most important observation reference in the sky for tracking the axial precession in the firmament is the path of the sun, representing the ecliptic, which is not affected by the precession. The best observation references to track the movement of the stars relative to the ecliptic are the equinoctial and solstitial points on the horizon. This is also the reason that the axial precession is also called the precession of equinoxes.

Interestingly, the Greek astronomer Hipparcus also tried to calculate the precessional cycle by calculating the displacement of Spica relative to the equinoctial points. The third century neoplatonist Porphyry's report about the Roman Mithraists, which says "The equinoctial region they assigned to Mithras as an appropriate seat,"[194] addresses the importance of these astronomical observation references.

In Mithraic cosmography the dome of the cosmos rotates on the cosmic cross. The chartaqi is also designed incorporating this concept purely. This structure is a Mithraic/Zurvanite time-capsule, the house of eternal time which reckons the breath of the world during the six ages of finite time. It represents the revolving dome of heaven centered on the ecliptic pole or the cosmic cross.

The concept of infinite time/space as the superior form of finite time/space seems to be the core of Zurvanite cosmology, based on an interpretation of the great astrological cycle of the universe. According to Pahlavi sources, the cosmos (*sipihr*), which is the body of finite time, is born from the infinite, and the evolution of material creation begins from this. The four elements derive from *sipihr*, which is the primal matter, then a form of the mixing of the primary properties appears, and finally human beings and animals (organic life) emerges. This form of the fully developed cosmos exists for twelve thousand years and then will be taken up into the last form or "final body" (*tan-i-pasin*), which is in turn absorbed to the infinite.[195]

[194] Porphyry, *Cave of the Nymphs*, 6.
[195] Zaehner, *Zurvan*, 266.

7.2 Qasr Amrah

The earliest surviving image of the sky painted on a non-flat surface is a fresco on the hemispheric dome of a caldarium (hot bath) in Qasr Amra in modern Jordan. The surviving building is a part of a larger desert palace built in the early eighth century by Umayyad Prince Wallid II or Yazid III, who spent a long time away from Damascus, the Umayyad administrative center, before assuming the throne. In this fresco, thirty-five identifiable constellations are depicted, including the zodiac shown in accurate angle. The twelve radii in the fresco do not emerge from the center of the dome but from the ecliptic North Pole, with the constellation signs arranged accordingly. The order of the stars in the fresco is reversed to counter-clockwise order, suggesting that the dome was not meant to imitate the visible order of the sky but represented a projected order, as used to be shown on a flat surface (figs. 7.6, 7.7). Other frescoes in Qasr Amra include naked women and hunting scenes. The animals in these scenes are commonly found in Persia rather than the area of Qasr Amra. One of the frescoes also shows six figures including the Persian Sassanid King. Yazid's mother was a Persian princess and familiar with Persian culture and probably influenced the Umayyad princes.[196]

[196] Patricia Baker, "The Frescoes of Amra," *Saudi Aramco World* 31.4 (July-August 1980): 22–25, https://www.saudiaramcoworld.com.

Fig. 7.5. Exterior view of the caldarium at Qasr Amra. Google Maps: Panoramio, "Jordan's Desert Castle – Qasr Amra."

Fig. 7.6. Interior view of the dome of the caldarium at Qasr Amra. Wikipedia, "Quseir Amra Zodiac."

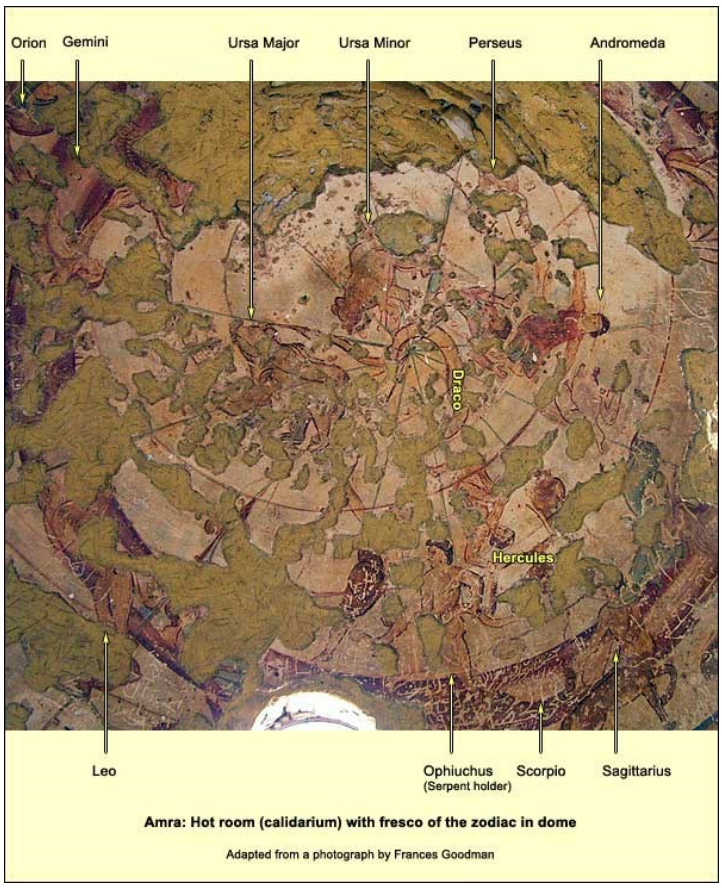

Fig. 7.7. Detailed image of the dome of the caldarium at Qasr Amra showing the constellations. Micah Key, "Desert Complexes."

7.3 From Chartaqi to Roman Mithraism

The architectural dome symbolically represented the cosmos in many traditions. The origins of this synchronic symbolism may even have evolved from the human perception of space. There is no doubt that sky-watching had a dominant influence on the development of abstracting the orders of geometry and mathematics by our ancestors. But what is important and probably unique about chartaqi is a particular interpretation of the dome of the sky centered on the ecliptic pole, built on a cross, and oriented to the real world equinoctial and solstitial references. There is no evidence for frescoes or inscriptions on chartaqi, but the later example of Qasr Amra suggests

that in the Iranian tradition the dome could be conceptualized as the dome of heaven representing the sky based on the ecliptic pole.

As mentioned earlier, in Roman Mithraic symbolism the very concept of the revolving cosmos centered on the ecliptic pole is represented in the architecture of Mithraea in a different way by positioning the image of the tauroctony on the end of the vaulted space. The tauroctony is probably a Roman invention as an astro-cryptographic reference to the ecliptic pole, but the representation of the ecliptic pole on the dome is preserved at least in the Roman Mithraeum in Ponza by depicting a snake, representing Draco (adjacent to Ursa Minor and Ursa Major) on the dome-shaped ceiling of the Mithraeum, along with the zodiac constellations on the perimeter.

Fig. 7.8. Mithraeum excavated at Dura-Europos, in modern Syria (currently in the collection of Yale University), with tauroctony at the center encircled by the zodiac. The vaulted shape of Roman Mithraea represents the cosmos revolving around the north ecliptic pole – a concept that is incorporated in the design of chartaqi as a dome, representing the revolving dome of heaven in reference to the ecliptic. Photograph by author.

Afterword

There are many questions that remain unanswered about chartaqi. I took a long journey with a departure from chartaqi to other realms in Architecture, Astronomy, and Mythology, and discovered one door after another. I chose a broad and interdisciplinary approach to a such complex problem, the phenomenological understanding of the nature of the historic problem of the meaning and purpose of chartaqi, trying to familiarize myself with the way our ancestors lived and perceived space, nature, and the landscape, which led me to a holistic approach to the problem. Traveling to far historic locations, wandering around archaeological sites, gazing into the night sky, and meditating on forgotten natural phenomena on our landscape was as important as analytical and critical thinking on historic sources and modern literature in the field.

Parts of this research have been presented at several international conferences and have been published.[197] I hope this work opens new windows in the study of history of architecture and ancient cosmologies to be continued by other scholars.

[197] Reza Assasi, "Swastika: The forgotten constellation representing the chariot of Mithras," *Ancient Cosmologies and Modern Prophets* (2013): 407-18

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