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## CALENDARS IN ANTIQUITY: THE EXAMPLE OF THE ANCIENT ATHENIAN CALENDAR IN THE CHURCH OF PANAGIA GORGOEPIKOOS

**ABSTRACT:** This study examines the unique and remarkably well-preserved Frieze located in the Church of Panagia Gorgoeepikoos (St. Eleftherios) in Athens. The Frieze provides a plethora of information about the ancient Athenian calendar and its cultural and astronomical significance. Carved from white Pentelic marble, it depicts the 12 months of the Athenian calendar accompanied by their corresponding zodiacal signs and seasonal activities. Through careful observation and analysis, figure representations of months, seasons, and even divisions of the day can be seen on the Frieze. The detailed portrayal of the depicted figures, and the later incorporation of Christian elements provide valuable insights into the daily life and worldview of ancient Athenians. This remarkable artwork stands as a rare surviving example of an ancient Greek sculpted illustrated calendar, offering a window into the temporal rhythms and traditions of ancient Athens.

**KEY WORDS:** church of Panagia Gorgoeepikoos, Athenian calendar, astronomy, culture.



Figure 1. The western façade of the church of Panagia Gorgoeipikoos



Figure 2. Aerial view of the church of Panagia Gorgoeipikoos next to the Metropolitan Cathedral of Athens  
Credits: Google Earth

## INTRODUCTION

This study explores the unique and well-preserved Frieze found in the Panagia Gorgoepikoos in Athens, also known as church of St. Eleftherios, which provides a plethora of information related with the ancient Athenian calendar and its cultural significance. The Frieze, carved from white Pentelic marble, depicts the 12 months of the Athenian calendar along with corresponding zodiacal signs and seasonal activities. Through careful observation and analysis, can be seen the months, seasons, and even hourly divisions represented on the Frieze. The details of the depicted figures, their dressing that symbolizes the changing weather, and the incorporation of Christian elements provide valuable insights into the ancient Athenian way of life. This remarkable artwork serves as a rare surviving example of an ancient Greek sculpted illustrated calendar, providing a look into the daily rhythms and traditions of ancient Athenians.

### RELIGIOUS AND ARCHITECTURAL SIGNIFICANCE OF THE CHURCH

Panagia Gorgoepikoos is a church (Figure 1) to the south of the Orthodox Metropolitan Cathedral (Mitropolis) church (Figure 2), in the historical center of Athens. The church was constructed in the ruins of the ancient sanctuary, which was dedicated to ancient Greek goddess Eileithyia associated with childbirth and labor pains [1]. She also protected and supported women in labor, while also sending the pains of childbirth during delivery [2]. From Christian times to the present day, the church has been dedicated to the protector of childbirth St. Eleftherios [2] and it is likely that St. Eleftherios is a folk etymology of the name of ancient goddess Eileithyia. The church is also known as Panagia Gorgoepikoos (Virgin Mary who grants requests quickly), because she was the patron and protector of Christian Athens and her name became associated with miracles involving childness women and women with difficult pregnancies as well. Above the central entrance of this small church there is immured a carved Frieze of great archaeological, historical and even astronomical significance.

Regarding the architectural significance of the temple, it is built based on a cruciform style while the church features a tripartite narthex, and its well-preserved octagonal dome, constructed from bricks, stands as a prime example of the Athenian-type church. The lower parts feature non-decorated marble pieces, while the upper parts are adorned with an impressive collection of 90 Greek, Roman, and Byzantine reliefs [4]. Additionally, the church houses 9th and 10th-century reliefs with Eastern

motifs and sculptures depicting both Roman trophies and prizes from the Panathenaic Games. Today, the church serves as a chapel of immense historical significance. It has maintained its original structure, while the marble sculptures and carvings embedded in its walls, featuring zodiac signs, flowers, branches, and human figures, add immeasurable archaeological value. The church's architectural form and the variety of art it houses make it a unique historical monument, preserving layers of cultural and religious history within its walls. The blend of non-decorated and intricately carved sections of the church walls provides a vivid depiction of historical transitions, from the simplistic to the ornate, reflecting the evolving art and architecture styles over centuries.

### THE ATHENEAN CALENDAR ON THE FRIEZE: A UNIQUE MARBLE CULTURAL ARTIFACT

Among the church's treasures is a remarkable carved Frieze, initially a single piece of white Pentelic marble. This artwork was later divided into two and immured above the main entrance. Despite being shorter than its original size and misplaced in order, this Frieze stands as a significant archaeological, cultural and historical artifact. It offers diverse interpretations, both religious and ethnological, particularly in relation to the ancient Athenian and Roman calendars, which were intricately tied to astronomical events like equinoxes and solstices.



Figure 3. The left part of the Frieze



Figure 4. The right part of the Frieze

The church has drawn the attention of many scholars because of its “Frieze” which actually seems to be just a masterpiece of the renowned marble from mount Penteli in Attiki region in Greece. The marble was cut in half and put inside the western side of the temple, above the main door. There is about 2/12 of the original length left in the total immured part

of the work. This part either broke by accident or was cut on purpose when the Frieze was put in place so that the two pieces would fit together on the side of the temple. One interesting thing about the Frieze is that its two pieces were fused together wrong: the first one went where the second one should have gone, and so on [4, 5]. The pieces are  $(2.74 + 2.99 \text{ m}) \times 0.53 \text{ m}$  in size, with relief depictions of 0.23 m in height [6]. The placement of the pieces led to different religious or anthropological interpretations. These interpretations were linked to the ancient Greek and Roman calendar and the dates of their festivals, which always used the equinoxes and solstices as reference points. To be more specific, during the reign of Emperor Hadrian (117-138), the new year began after the autumnal equinox according to the Julian calendar which had been introduced in Athens. From the 6th to the 11th century, the religious year of the Christians in Athens began at the spring equinox whereas the civil year started shortly afterwards. Thus, Christians celebrated the Annunciation of the Theotokos and Holy Easter, while pagans celebrated the Great Dionysia [2]. Moreover, the three crosses inside the circles are another unusual feature of the Frieze. They were added later at various points on the relief in an attempt to transform the original work into a Christian decoration.

This Frieze is the only sculpted and carved ancient Greek or Athens calendar that has survived to this day. Figures 3 and 4 show the left and the right part of the Frieze, respectively. The relief depictions on it show the months of the old Athenian calendar as they appear on the Frieze from left to right (Table 1), which can be used to learn about people’s habits and activities in Athens in those days. From the Frieze’s symmetry and the placement of the human relief figures, we can identify ten sections of roughly equal size and correlate them with the months of the ancient Athenian calendar. Based on the structure of the whole Frieze, it was possible to determine that the two missing sections, corresponding to 2/12 of the Frieze’s original length, represented the months of Anthesterion and Elaphebolion [3].

TABLE 1: THE MONTHS OF THE ANCIENT ATHENIAN CALENDAR

Year				
Winter half		Summer half		
Winter	Spring	Summer	Autumn	Metoporon
Maemacterion	Anthesterion	Metageitnion	Thargelion	Pyanepsion
Poseideon	Elaphebolion	Sciophorion	Boedromion	
Gamelion	Munychion	Hecatombaeon		



## THE ASTRONOMICAL SIGNIFICANCE OF THE FRIEZE

Regarding the astronomical significance of the Frieze, the Frieze is also known as a zodiac because the signs of the zodiac are depicted at the end of each section. The signs appear in the following astronomical order: Scorpio, Sagittarius, Capricornus, Aries, Taurus, Gemini, Cancer, Leo (all represented by male figures), Virgo (represented by a female figure), and then the Scorpion's Claws sign, also known as Libra. Each section begins with a man figure symbolizing a month. It is worth mentioning that the carvings do not seem to depict gods or heroes; instead, they portray ordinary people from Athens. So, C. Boetticher assigned names to the figures such as "Athenian eupatrid," "Athenian citizen during the ceremony of sowing the earth," "Athenian citizen during the procession of the Dionysia," "citizen wearing a wreath," "Athenian teenager in the palace," and "Athenian citizen following the procession of the Panathenaeans." (for more details see [3]).

Furthermore, in accordance with the zodiac signs, the sections are named after months and appear in the following order: Pyanepsion, Maemacterion, Poseideon, Gamelion, Munychion, Thargelion, Scirophorion, Hecatombaeon, Metageitnion, and Boedromion. All these male figures symbolizing a month share several characteristics: they all turn away from the previous section and face their associated zodiac sign. Their clothes resembles that worn by people in ancient Athens. The most notably, their attire changes according to the weather of each month. The year is divided into five seasons, which become clearer when the months are grouped accordingly: Metoporon (meaning "after the fruits") includes just one month (Pyanepsion); Winter consists of four months; Spring has three; Summer include six; and Autumn has two. In winter, the man is depicted wearing thick clothes and shoes. In Thargelion, the first month of summer, he appears half-naked. In the second month, Scirophorion, the figure is shown completely nude whereas on the hottest days of the year, he is shielding his eyes and head with his hand from the intense heat. By the third month, Hecatombaeon, the man wears light clothing, as the extreme heat begins to subside. As summer draws to a close the final two autumn months show the figure once again in heavier clothing [4, 5]. The months and the seasons are shown in Table 1.

The figures that follow the male figure symbolizing the month in each section of the Frieze represent Kairos and Ora, which refer to different concepts of time. The word *Kairos* refers to a decisive or critical time, a chance, the time of maturity or a period of specific significance. *Trygetos* represents the grape harvest, *Arotos* the farming season, *Sporos* the planting season, *Agones* the season for athletic contests, *Gamos* or

*Nymphios* the time for marriage, *Tragodos* the season for tragedy, *Vouphonos* the season of heat waves, *Hieros kairos Panathineon* the time for celebrating the Panathenaea festival, *Kyon Sirios* the season of hot and dry weather and *Pan* the season for springtime grazing, *Heracles* the season for apples, *Hippasion* the season for horseback riding. *Ora* can signify a specific time, a period of time, a season of the year, the weather, a part of the day or night, an hour (the 12th of the day or the 24th of the night), or the appropriate time or period for a particular activity such as sleeping or eating. The *Ora* on the Frieze represent the appropriate time for a given activity. Under the term *Ora*, we encounter the following names: *Pherousa* (harvest time), *Gymnastiki* (gymnastics), *Kypridos Acmi* (honeymoon), *Mousiki* (music), *Orchesis* (dancing), *Spondi* (time for making agreements or offerings), *Artemis* (time for hunting and sailing) and *Teleti* (ceremony). *Kairos*, *Ora* and the zodiacal sign associated with each month are shown in Table 2 as depicted on the Frieze of the ancient Athenian calendar [4, 5].

TABLE 2. KAIROS, ORA AND THE ZODIACAL SIGN ASSOCIATED WITH EACH MONTH OF THE ANCIENT ATHENIAN CALENDAR AS DEPICTED ON THE FRIEZE FROM LEFT TO RIGHT

Section	Month	Kairos	Ora	Sign
1	Pyanepsion	Metoporon, <i>Trygetos</i>	<i>Pherousa</i>	Scorpio
2	Maemacterion	Winter ( <i>kairos</i> of 3 and 6 months), <i>Arotos</i> , <i>Sporos</i>	—	Sagittarius
3	Poseideon	<i>Agones</i>	<i>Gymnastiki</i>	Capricornus
4	Gamelion	<i>Nymphios</i> or <i>Gamos</i>	<i>Kypridos Acmi</i>	Aquarius
5	Anthesterion	Spring ( <i>kairos</i> of 3 months), <i>Pan</i>	<i>Mousiki</i> , <i>Orchesis</i>	Pisces
6	Elaphebolion	<i>Tragodos</i>	<i>Spondi</i>	Aries
7	Munychion	—	<i>Artemis</i>	Taurus
8	Thargelion	Summer ( <i>kairos</i> of 3 and 6 months)	—	Gemini (Dioskouroi)
9	Sciophorion	<i>Vouphonos</i>	—	Cancer
10	Hecatombaeon	<i>Hieros kairos Panathineon</i> , <i>Kyon</i> , <i>Sirios</i>	<i>Teleti</i>	Leo
11	Metageitnion	<i>Heracles</i>	2-month <i>ora</i> of autumn	Virgo
12	Boedromion	<i>Hippasion</i>		Libra

As an example, we will present the section on the Frieze which corresponds to the month of Poseideon. Poseideon is the sixth month in the ancient Athenian calendar. It was a winter month with 29 days and corresponded to the period from December 12 to January 10 in the Gregorian calendar and from November 30 to December 29 in the Julian calendar respectively. The figures appearing in Figure 5 from left to right

are: the month of Poseideon, Ora *Gymnastiki* (gymnastics), Kairos *Agones* (games) and the zodiac sign Capricornus.



Figure 5. Figures on the Frieze corresponding to the month of Poseideon

Researchers identified the male figure of the month as either an Athenian citizen representing the Athenian people during the Dionysian procession or as a spectator of a cockfight, although there is no depiction of cockfights [7]. The female figure, Ora *Gymnastiki*, represents the gymnastic exercises took place in Attica. The people of Attica were compelled to cease their activities due to the wintry weather condition of the month of Poseideon. Farmers set aside their plows, interrupting all the agricultural activities, while sailors pulled their ships ashore. Thus, they took advantage of this time off from work to prepare their bodies with gymnastic exercises, ensuring they would be ready for the challenges of live after winter's end. It is also known that during this month, young farmers practiced and an ancient exercise called *askolia*. They would jump on one leg over an inflated wineskin that was smeared with oil. The wreaths made of palm branches, a symbol of gymnastic contests, indicate the pre-eminent time for these competitions.

## CONCLUSIONS

Summarizing the church of Panagia Gorgoepikoos serves an excellent example of an artifact that combines not only an aesthetic, religious, cultural value but also an astronomical significance. Each section of its Frieze contains elements of astronomical importance, referring to the twelve lunar months (alternating between 29 and 30 days) of the ancient Athenian lunisolar calendar, which comprised 354 days, with Pyanopsion as the first month. When comparing the Athenian calendar with the modern one, a discontinuity becomes evident during the period from January 10th and January 21st, due to the 354-day length of the civil year in ancient Athens. The sections of the Frieze also provide a very interesting connection between ancient Greek civilization with astronomical issues, highlighting the need of the protection and preservation of such cultural heritage monuments.



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## КАЛЕНДАРИ У АНТИЦИ: ПРИМЕР АНТИЧКОГ АТИНСКОГ КАЛЕНДАРА У ЦРКВИ ПАНАГИЈЕ ГОРГОЕПИКОС

### Резиме

Ова студија истражује јединствен и добро очуван фриз пронађен у цркви Панагија Горгоепикоос (Свети Елефтериос) у Атини, који пружа мноштво информација у вези са древним атинским календаром и његовим културним значајем.

Фриз, исклесан од белог пентелијског мермера, приказује 12 месеци атинског календара заједно са одговарајућим зодијакалним знацима и сезонским активностима. Пажљивим посматрањем и анализом могу се уочити месеци, годишња доба, па чак и поделе по сату представљене на фризу. Детаљи приказаних фигура, њихово одевање које симболизује променљиво време, као и инкорпорација хришћанских елемената дају драгоцене увиде у древни атински начин живота. Ово изванредно уметничко дело служи као редак преживели пример старогрчког извајаног илустрованог календара, дајући слику о дневним ритмовима и традицијама старих Атињана.