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THE ALEXANDRIAN MILLENIUM (A.D. 2009) AND THE ASTRONOMICAL DATA

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Abstract. The outset of the contemporary system of chronology (A.D.; common era; our era; new era) is connected with the year of Christ's Birth as a God-man. Dionysius Exiguus, a Roman monk calculated this year in VI century. Nowadays, it is more and more believed that Dionysius made a miscount in his computation. In the present work we make an attempt to determine this miscount through astronomical and calendar computations. For that purpose, we use data from Church tradition and St. Johns Gospel. It was found that the miscount of Dionysius regarding the year of Christ's Birth is 9 years i.e. the Alexandrian chroniclers were right (according to them Jesus was born in A.D. 9). If it is so, we must celebrate 2000 years from Christ's Birth and the end of the second Alexandrian Millenium in 2009, on December 25th.

1. INTRODUCTION

According to Dionysius, Christ was born as a God-man on December 25th, 1 B.C. The Crucifixion was in A.D. 31 on Friday, March 23rd. The Resurrection is in the third day after Crucifixion, on Sunday, March 25th. All dates are according to the Julian calendar. The most authoritative other views on the year of Resurrection are A.D. 29, A.D. 34 and A.D. 42. They belong respectively to the ancient annalists Hippolytus, Panadorus (Grumel V., 1958) and Eusebius of Caesarea (Old Bulgarian literature, 5, 1992). The last year is the Alexandrian year of Resurrection, while the Alexandrian year of Christmas is A.D. 9 (Dobrev I., 1976), hence the beginning of the third Alexandrian Millenium is in A.D. 2009.

The years indicated by Dionysius have caused many debates that are continuing for many centuries. There are many hypotheses about the years of Christ's Birth and Resurrection. The accepted opinion today is that Dionysius had made a miscount. Academician N. Boneff (Boneff N., 1949) cites the competent chronologist F. Ginzel, who writes: "During the Middle Ages and in more recent time, many people crushed their minds to correct the mistake of Dionysius but the accessible subsidiary tools are powerless". The "subsidiary tools" are the astronomical and calendar computations which are more powerful today, therefore Ginzel was probably not right.

2. THE DATA ABOUT THE CHRISTMAS AND RESURRECTION

About the year of Passion and the age of Christ as a God-man, we know that:

1) The Crucifixion was on Good Friday, the day before the Jewish Passover (John 19:14 and 19:31), i.e. on the 14th day of the Moon (the Jewish days begin in the evening, thus the Jewish Passover begins in the evening of the 14th day of the Moon after the vernal equinox);

2) The Resurrection was on Sunday, March 25th, and the Good Friday was on March 23rd (the Orthodox Church tradition);

3) Jesus was born on December 25th and His age as a God-man was 33 years (the Orthodox Church tradition) or 30 years (according to Dionysius).

From (1) and (2) follows that the 14th day of the Moon was on March 23rd. Therefore, the first day of the Moon was on March 10th. It began in the evening of March 9th and the astronomical new Moon was most likely on March 9th, some hours earlier. The computed new Moon may be on March 8th, 9th or 10th (if we take into account the possible miscounts for such a long period).

3. CALCULATIONS AND RESULTS

We made calculations with the astronomical programme "Guide 6". We began with the verification of the correctness of the supposed years of Resurrection: A.D. 29, A.D. 31, A.D. 34 and A.D. 42. We give here the calendar for March A.D. 29 (Table 1), some phases of the Moon in 31 A.D. (Table 2), calendar for March A.D. 34 (Table 3) and A.D. 42 (Table 4) and some phases of the Moon in A.D. 42 (Table 5).

Table 1: The calendar for March A.D. 29.

Day	Date
Mo:	** 07 14 21 28
Tu:	01 08 15 22 29
We:	02 09 16 23 30
Th:	03 10 17 24 31
Fr:	04 11 18 25 **
Sa:	05 12 19 26 **
Su:	06 13 20 27 **

March 25th in the year A.D. 29 was on Friday and the opinion of Hippolytus contradicts the Orthodox Church tradition.

Table 2: Some phases of the Moon in A.D. 31.

Phase	Date and Hour
New Moon	- 11 Mar 22:24 UT
First quarter	- 19 Mar 21:46 UT
Fool Moon	- 27 Mar 11:00 UT

The new Moon in March A.D. 31 was on 11th. The 14th day of the Moon was not on the March 23rd and the opinion of Dionysius contradicts the data of St. John.

Table 3: The calendar for March A.D. 34.

Day	Date
Mo:	01 08 15 22 29
Tu:	02 09 16 23 30
We:	03 10 17 24 31
Th:	04 11 18 25 **
Fr:	05 12 19 26 **
Sa:	06 13 20 27 **
Su:	07 14 21 28 **

March 25th in the year A.D. 34 was on Thursday and the opinion of Panadorus contradicts the Orthodox Church tradition.

Table 4: The calendar for March A.D. 42.

Day	Date
Mo:	** 05 12 19 26
Tu:	** 06 13 20 27
We:	** 07 14 21 28
Th:	01 08 15 22 29
Fr:	02 09 16 23 30
Sa:	03 10 17 24 31
Su:	04 11 18 25 **

Table 5: Some phases of the Moon in A.D. 42.

Phase	Date and Hour
New Moon	- 10 March 10:27 UT
First quarter	- 17 March 07:02 UT
Fool Moon	- 25 March 10:26 UT

The new Moon was on March 10th and March 25th was on Sunday. Consequently, A.D. 42, i.e. the Alexandrian year of Resurrection is appropriate.

Are there other such years? The earliest hypothetical year of Resurrection is A.D. 19 (if we give an interpretation to Comet of Halley in 12 B.C. as the Star of Bethlehem and the age of Christ is 30 years). Starting from A.D. 19, we checked all years to A.D. 42. The calculations show that there is only one year in this interval that satisfy both requirements for the year of Resurrection (1) and (2), which is the year A.D. 42.

According to the Orthodox Church tradition, the age of Christ is 33 years, so in this case, the year of Christ's Birth is A.D. 9. However, this is the Alexandrian year of Christ's Birth. Therefore, Alexandrian chroniclers were probably right.

4. SOME HISTORICAL INFORMATION

Eusebius of Caesarea was a follower of the Alexandrian school. According to him, Jesus was born as a God-man in the 13th year of the Sun and 10th year of the Moon (Old Bulgarian literature, 1992). It corresponds to A.D. 9 (Grumel V., 1958). Eusebius specifies the day of Christ's Birth too - the fourth day of the week. At that time, the week began on Sunday and the fourth day of the week was Wednesday. In addition, December 25th in A. D. 9 was Wednesday, indeed (Table 6).

Table 6: The calendar for December A. D. 9.

Day	Date
Mo:	** 02 09 16 23 30
Tu:	** 03 10 17 24 31
We:	** 04 11 18 25 **
Th:	** 05 12 19 26 **
Fr:	** 06 13 20 27 **
Sa:	** 07 14 21 28 **
Su:	01 08 15 22 29 **

According to Eusebius, the day of Resurrection was Sunday, March 25th (Old Bulgarian literature, 1992), while the year of Christ's Passions was indiction[1] 15th. The year A.D. 42 satisfies these conditions. Eusebius was the bishop of Caesarea by Palestine about 1700 years ago. He was the founder of the Church historiography, thus his information is probably accurate and exact.

Many other eminent ancient annalists were followers of the Alexandrian school too. Alexandrian specialists had a reputation of being very good computists and Alexandrian system of chronology was widespread. The Orthodox Church still uses the Alexandrian list of Christian Passovers.

Here are some citations from other well-known annalists (Dobrev I., 1976). They corroborate that Jesus was born in A.D. 9:

(i) George Sinkel: "Year 88 of God's Incarnation. The Senate deprived Domecian's honours". The Incarnation was 9 months before Christ's Birth therefore 88 of Incarnation is 87 of Christ's Birth. However, Domecian was emperor until A.D. 96. It is evident: George Sinkel considers that Christ's Birth was in A.D. 9 (96 - 87 = 9).

(ii) Theophanes Confessor: "Year 277 of God's Incarnation (276 of Christmas), first year of Diocletian ". According to contemporary historians the first year of Diocletian is A.D. 285; 285 - 276 = 9.

(iii) Maxim the Confessor: "In year 316 of Christ a Council was held at Nicea ". We know that the Council of Nicea was in A.D. 325; 325 - 316 = 9.

(iv) Anastasius Bibliothecarius: "In year 709 of God's Incarnation (708 of Christmas) Leo became emperor of Byzantines ". Leo the Isarian (Syrian) became emperor in A.D. 717; hence 717 - 708 = 9.

[1] An indiction is any of the years in a 15-year cycle used to date medieval documents.

5. THE YEARS OF EMPEROR TIBERIUS

The most valid objection against A.D. 42 as an year of Resurrection is connected with the years of the emperor Tiberius in whose time was Crucifixion. St. Luke the Evangelist tells us that John the Baptist began his activity in the fifteenth year of Tiberius (Luke 3:1; 3:2). Shortly after that, Jesus began His service. According to the contemporary historians, Tiberius Claudius Nero was emperor during A.D. 14 - 37 (i.e. he died some years before Alexandrian year of Resurrection). If the beginning of government of Tiberius was in A.D. 14, the fifteenth year was A.D. 29. At that time Jesus was approximately 30 (Luke 3:23). It follows that He was born around the beginning of our era, i.e. we come to the year pointed out by Dionysius. It is obvious that the accepted years of Tiberius are computed on the basis of the years pointed from Dionysius. However, it could be possible that Dionysius made miscounts in his calculations. Consequently, the years of Tiberius are also debatable problem.

The years of Tiberius accepted from the contemporary historians (A.D. 14-37) are computed many centuries later. There were other competent opinions about the years of Tiberius. According to Maxim the Confessor and George Sinkel, Tiberius became emperor in year 5515 of the Creation (Kuzenkov P., 2006). They used Alexandrian era of the Creation (5492 B.C.) and the year 5515 of Creation is A.D. 23/24 (not A.D. 14). Tiberius was emperor approximately 22 years, hence until A.D. 46/47.

Our hypothesis is that the accepted years of the emperor Tiberius (14 - 37) are right but they have been determined in the Alexandrian system of chronology (like the citations above). In the contemporary system of chronology, they are respectively A.D. 23/24 and A.D. 46/47. In such case there are no contradictions and all data are in accordance with each other (St. Johns and St. Lukes Gospels, Orthodox Church tradition, astronomical calculations and Alexandrian year of Resurrection).

6. CONCLUSION

The years of Christ's Birth and Resurrection calculated by Dionysius are probably mistaken. They contradict the astronomical calculations and Orthodox Church tradition. The miscount of Dionysius of the beginning of our era is probably 9 years.

The most likely year of Christ's Birth is A.D. 9. This is the only year, pointed from some ancient chroniclers, which is not contradicting the astronomical calculations and Orthodox Church tradition.

If the used information of Gospels, Orthodox Church tradition, Eusebius and other mentioned chroniclers is true we must celebrate 2000 years from Christmas and the beginning of the third Alexandrian Millenium in 2009 on December 25th.

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