

ADDIS ABABA UNIVERSITY SCHOOL OF GRADUATE
STUDIES



CRITICAL ANALYSIS ON THE CONSTRUCTIONS OF THE
ETHIOPIAN CALENDAR IN PARTICULAR: AND THAT OF
THE COPTIC CALENDAR IN GENERAL.

BY

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MAY 2016

ADDIS ABABA

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A THESIS SUBMITTED TO CENTER FOR AFRICAN AND ORIENTAL STUDIES OF ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASERS IN AFRICAN STUDIES.

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Acknowledgment

This work evolving to its present shape has benefited from critical imputes rendered by several academicians. I would like to extend my sincere appreciation to my adviser Doctor Getachew Sahile Mariam for his insightful comments. Academicians in the African and Oriental studies, including Yikunnoamak Mezgebu from the Linguistic department of Addis Ababa University, have also sacrificed their precious time reading the manuscript and verifying the appropriate sources for data used in the writing of this thesis. I would also like to extend my heartfelt appreciation to the various librarians and monasteries for their unreserved assistance in opening their veiled doors and providing me with invaluable documents otherwise inaccessible to the public. As self-sponsoring researcher, while developing my thesis financial challenges would have compromised my ability to travel to remote and inaccessible monasteries and gather my data. However, financial challenges were elevated by the nurturing kindness extended from Abonesh, Meaza, Fasika, and their families, I am extending my gratitude to all of them, and may the almighty creator bless them in abundance.

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List of acronyms

‘Äwäd	Calendar cycle.
Copt	Egyptians before Arab invention also Christians in Egypt
Däbärä zäyät	feast of Jesus Christ’s denotation about the last Judgment
Epact cycle	19 years Solar Cycle
Epact	calendar tool used to reckon the lunar day
Epileptics	Lunatick
Equinox	Equal hours of day and Night
Eschatology	The last Judgment
Mätəqə (shofar)	calendar system that used as a collecting engine of Feasts and fasting, It is also the Jew New Year
Moon Month	six month of 30 and six months of 29 days, that is equal to 354 days.
Rəkəbä Kahənat	Day of assembly of church elites, 25 days after Easter.
Pascha	Jew Passover, Christian Easter, (Resurrection)
See	the Sit of the Holy Synod and Patriarch
Şomä Dəḥənät	Wednesday and Friday fasting
Weevil	Insects, mainly attack woods and cereals akin to Bark Beetles

Fidäl Symbols and Transcription

1. Consonants

ʊ h	ɹ r	ɾ t	ɬ '	ʒ ž	ɱ ɮ	ɸ f
ɳ l	ɲ s	ʦ č	ɧ k	ʃ y	ɸ̌ ç	p T
ɬ ɸ	ɳ š	ɾ ɰ	ɯ w	ɹ d	ʒ p	ɸ q ^w
ɱ m	ɸ q	ɳ n	ɮ '	ʒ ğ	ɧ ʃ	ɾ ɰ ^w
ɯ ś	ɲ b	ʦ ñ	ɬ z	ɳ g	θ ɖ	ɧ k ^w
						ɾ g ^w

2. Vowels

1	2	3	4	5	6	7
Ä	u	I	A	E	ə or no vowel	O
ɲ = bā	ɲ• = bu	ɲ• = bi	ɳ = ba	ɲ = be	ɳ = bə, b	ɲ = bo

3. Numerals

1	2	3	4	5	6	7	8	9	10
१	२	३	४	५	६	७	८	९	१०
20	30	40	50	60	70	80	90	100	1000
२०	३०	४०	५०	६०	७०	८०	९०	१००	१०००

Abstract

For long time, many scholars including Ethiopians perceived that the Ethiopian calendar is adopted from the Egyptian. However, an observation to the time reckoning and calendar usage of the duo attests that there are variations manifest in the duo. This researcher, therefore, investigated the origins of Ethiopian calendar comparing it with that of Coptic. The western media and writers and others categorization of the Ethiopian Orthodox church to the Coptic denomination leads them to sort the Ethiopian calendar to Coptic.

The researcher gathers primary data from ancient monasteries including Daga 'əstefanos, Hayqə 'əstefanos and Mota Giyoraḡis. In addition, secondary data were also integrated after reviewing seminal books of various sorts. I selected consultants from three different occupations. I.e. From clergies, writers and Coptic Church. Hence, from these written document and consultants sources, the major elements in Ethiopian calendar, the way of allotting New Year, feasts and fasting, the connection between the Ethiopian calendar and astronomy, zodiac and magic, the position of calendar in the life of Ethiopians and related issues were discussed.

The major findings of the study lead the researcher to argue that descendants of Ham established the Ethiopian calendar. After the two states sovereignty, Copts reckoned their calendar in connection with the flooding of Nile and the appearance of Dog Star, whereas Ethiopians attached it with their climate. Another, yet, important finding is that the Ethiopians were the first people who bring into being the wisdom of astrology and astrology was the main instrument that produce calendar.

CHAPTER ONE

1. Introduction

1.1 Background of the Study

The Oxford dictionary of English defined calendar as a system by which time allotting in to fixed periods, having the beginning and end. ¹

The Ethiopian calendar fixed the oxford dictionary's beginning to the creation of the universe, and the last judgment (Eschatology or second coming of Christ.) Getačaw Hayəle Stated that, the first humans were described to originate the core point about calendar, they tried to practice calendar in different ways. The first one was from natural phenomenon and the other one from human practice.²

The importance of calendar is numerous on agricultural activities, feasts and fasting, commemorations of deaths and birth dates, individually and religiously. For instance, Christmas, True Friday and resurrection, etc. in all Christian denominations have their fixed calendar days. In addition, birth, migration, and death of Prophet Mohammad, cannot compute without calendar. We are also dependant on calendar from womb to tomb. Every activities of the society, like festivals, budget planning, daily, and annual individual and government planning etc, are exploit calendar as a tool.

Māsārət Səbəhātäl'āb accepted as a true, that Ancient peoples, Magicians, astronomers, calendar scholars, Jew, and Church scholars, were the founders of calendar.³

Hence, Calendar is an important manifestation of culture. There are many kinds of calendars in the world. The Julian, Gregorian, Persian, Islamic (hijra) ...etc. The importance of calendar is described in the research writing of Yi Zhang and Jing Guo as follow:-

Calendar as a necessary is used widely in human's daily life. Making a work plan or study schedule, you need calendar; celebrating a special day, you need calendar. Country's festivals cannot be confirmed without calendar; farmers cannot work without calendar to know farming season; historian or archaeologists doing the research are also

¹ Oxford dictionary of English terms. Eighth edition,(2005) page 200.

² ጌታቸው ሃይሌ (2006) “ባሕረሃሳብ”2ኛኛኦትም፣ገጽ 20

³ መሠረት ስብሐት-ሰከብ (1981) “ትውፊታዊ ሃሳብ ዘመንና ታሪክ”ገጽ 19

not without calendar. It is not difficult to find that we all cannot away from calendar from begin to dead.⁴

There is no question about the validity of calendar to the whole society around the world aspect. If it is an assent in this, the next step should be how we can study in various ways ?

It is factual that the religious Holy books, for instance, The Holy Bible and Holy Quran are the source of secular regulations, constitutions, and criminal codes in many countries in the world. These books are also the roots of calendars in many regions of the globe. The Islamic hejra is dominant calendar and way of reckoning day of fasting and feasts in Muslim world. The Holy Bible verse Gen. 1:1 in the beginning God Created the Heaven and the Earth.” reveals the creation of time (beginning) and universe simultaneously.

Getačaw Hayəle in his book Bāhire ḥässab, placed that in most parts of the world; Gregorian calendar, is widely used and said as its foundations depended relatively on the day of Easter.⁵

The oxford dictionary of Christian Church sustained its reflection on the formation of Gregorian calendar. According to Oxford dictionary of Christian church, Julian calendar was on convention during time that Christianity began. Then most Christian countries with the exception of certain Orthodox churches, adopted the New Gregorian Calendar, that reshaped by Gregory XIII in 1582.

As Orthodox Church, the entrance of Christianity to Ethiopia enhanced the way of calculating calendar in the country and the county adopted additional reckoning way with faith. Hence, what is the additional calendar system assorted with the former?

Many secular and religious scholars believe as the Ethiopian calendar derived from Julian calendar, claiming it is identical with Coptic calendar.⁶

There is also claim as the Ethiopian and Coptic calendars are Julian. This assert is, utterly denied by Coptic scholars. Father Matta El-Meskeen, a monk in the monastery of St. Macarius is among these Coptic scholars. His refusal to the connecting of Coptic calendar with Julian is demonstrated in his book “The Coptic Calendar” adorned-

⁴ Mikky,L and, Qian, He (Nov. 2015) “The history of calendar,” New York USA www.multifaiths.com Feb. 2016

⁵ ጌታቸው ሃይሌ (2006) “ባሕረ ሃሳብ” 2ኛ እትም፣ገጽ 65

⁶ ጎሩይ ስሜ (2000) “ትክክኛው የኢትዮጵያ ዘመን አቆጣጠር” ገጽ 30.

The Pharaohs knew their calendar from the year 4240 B.C. The famous Greek historian erodotus mentions that the Egyptians excelled the Greeks in adjusting their solar year by appending 5 days to the total of 12 months.⁷

To him Pharaohs were founder of the whole divisions of time, months, and years⁸.

In the same view, Joachim Gregor, supposed, as resulting calendar is now called the Alexandrian (Coptic) calendar; it survives today as the calendar in Ethiopia, and is used by the Coptic Church and other Christians in Ethiopia and Eritrea.

Most church scholars, monks, and preachers in the Ethiopian Orthodox Täwahido Church strongly argue that the Ethiopian calendar is resulting from Coptic calendar, after the mediation of prominent Alexandrian patriarch Demetrius, who ordained as patriarch in 180 CE, through revelation from God.⁹

There are also some other writers who indicate that the Ethiopian calendar was adopted from Zoroasterians and Jews¹⁰

This unrelated contemplation about Ethiopian calendar should be inspecting.

A deepest knowledge of the traditional calendar in Ethiopian Orthodox Church said disregard from the reign of 'Ädäyam Sägäd 'Eyasu (Gondarian era). According to Abba Fəqərə Yohannəs, the schools of 'Äbušakər were focused on training many traditional church calendars students before that era. However, after that era, the school twisted to evacuated, and the student who have a desire of learning church calendar education crooked to the schools on traditional religious scriptures, (Mäşəhaf betə). Still the education, on 'Äbušakər and Bähire ḥässab are lectured in the schools of traditional religious scriptures, (Mäşəhaf betə) and in few monasteries.¹¹

What is the reason to the decline of church calendar schools? Though it has various factors, few factors will be explained in this thesis.

⁷ Mallaty, EL-ME (1988),“Coptic Calendar.” Page 5.

⁸ *Ibid*

⁹ *Ibid*

¹⁰ It said that Ethiopia copied Zoroasterisc, the books of Bune, and magic also zodiac . “ኢትዮጵያም የዘረደሽትን (ዞርኢስተርንና) የመጽሐፈ ቡኒን መጽሐፈ አስማትም፣ ኮከብ ቆጠራን የቀዳችው ከዚህ ነው ይባላል።” ተ/ጳ/መከ-ርያ (፲፱፻፶ ዓ/ም) “ከጣኦት አምልኮ ወደ ክርስትና” ገጽ ፳፰

¹¹ Abba Fəqərə Yohannəs

The researcher will therefore, concentrate on the similarity and variation between the Ethiopian and Coptic calendars as well as the explanation of lunar and solar calendars in the process of calculating time and year. This research will also cover the place of astrological parts in the Ethiopian calendar. The foundation of Ethiopic zodiac and the place of calendar in the verses of the Holy Bible calendar. The place of calendar in the daily life of the Ethiopian clergies and lays will also take part in this research.

1.2. Statement of the Problems

The main intention in this paper is not only to emphasize source of our calendar, but also to research the utilization of calendar practice in religious and public life.

When we talk about the most dominant calendars, it is clear that the most internationally used calendar is the Gregorian calendar, which came across its name, after Pope Gregory XIII, who introduced it in 1582, to replace the Julian calendar.

The Eastern Orthodox including the Russians, Oriental orthodox (Ethiopian & Coptic churches) refuse to follow the Gregorian calendar. Another question needs answers. Are there any facts indicating that our calendar is Julian, Coptic or local?

If we articulate that, the origin of the Ethiopian calendar is after St. Demetrius, as many clergies do believe, it certainly leads us to wrong conclusion. Because Demetrius only paved the way of reckoning feast day of Easter, and he didn't originate other methods of the likes of calculating, New Year and other parts of calendar¹²

The council of Nicaea laid that the observance of Easter should be on Sunday, in which mostly believed as Jesus Christ's resurrection day. The Holy Bible demonstrated the day of resurrection as the Jew first day of the week. Women in first day of the week went to the Holy Sepulcher. The verse on the gospel of John 20:1, "The seventh day and Sabbath of Jew" is still the Saturday Sabbath of modern day Jew . Then the next day will fall on Sunday. The council Nicaea was carried out after half century of Patriarch Demetrius' ordination, in 325.¹³

It seems the observance of Easter on Sunday was not begun immediately after St. Demetrius. Due

¹² St. Demetrious only originated the bases of Epact and Mäṭəqə, never the whole era of computation."

መሠረት ስብሐት ለአብ (1981) "ትውፊታዊ ሃሳብ ዘመንና ታሪኩ"ገጽ 14. " ቅ.ድሜጥሮስ የአብቅቴንና የመጥቅፅን መሠረት አንደአገኘ ብቻ እንጂ የሃሳብ ዘመንን ጣጣ በሙሉ እንዳጠቃለለ አይደለም::"

¹³ F. L Cross and E. A Livingstone(1988) the oxford dictionary of Christian church. Page 220.

to that the issue of the celebration day of Easter raised again in the Nicene counsel.

I didn't catch Coptic source that indicate as St. Demetrius originated their calendar. The Coptic Church officer, Fr. Angelos Naqadi, refused the Ethiopian clergies got hold of the whole calendar dawns to Demetrious. Why clergies tried to emphasize the concept with the connection to this patriarch? This will expound in this thesis.

The day of Jew Pascal (Passover 15 Nissan/) is always falls at the first full moon following the Northern vernal equinox. At the first ecumenical council, it was decided to celebrate Easter on Sunday following paschal full moon, to differentiate it from Jewish Passover. At the council of Nicaea, it became one of the duties of the patriarch of Alexandria to determine the dates of Easter and to announce it to the other Christian churches.

According to the oxford dictionary of Christian church, the observance of Sunday as a festival dates from apostles¹³. The book of Apostles Diadache, which preserved in the Ethiopian Orthodox church, also recognize as apostles regulated the day of Easter observance to be on Sunday¹⁴

If observance of Easter on Sunday rose on the Nicaean council, then it was not practiced throughout the whole Christendom, according to some claims that put it early time from St. Demetrius. This needs further study.

The lack of converting traditional calculating way to scientific way is specified in the writing of Getačaw Hayäle .To him, he and Mäsšärät Səbəhätäl'b are the only writers who tried to make traditional way of calculating of calendar to scientific ways.¹⁵

To avoid this lack, Theological Colleges, in the Ethiopian Orthodox Church should engage on shaping the Traditional computation system to easiest scientific system. The scholars in the Theological colleges should motivate their students to focus on writing their senior essays on calendar due to the fact, that students in the theological colleges are not far away to contemporary scientific and traditional Church educations.

Unfortunately, in the Holy Trinity theological college there is only one senior essay on calendar and related issue from 1962-2010.¹⁶

Studying ancient calendar systems, their time allotting ways, searching their place in comparison with scientific reckoning methods should studied well.

¹⁴ ገብረ-ሥላሴ ብርሃኑ (፲፱፻፺፩ ዓ/ም) መዝሙረ ዳዊት፣ ገጽ ፭፻፶፯.

¹⁵ ጌታቸው ሃይሌ (2006) “ባሕረ ሃሳብ” 2ኛ እትም፣ ገጽ 13.

¹⁶ List of senior essays in the Holy Trinity theological college from 1962-2010, Nov. 2015

For instance, the shadow feet time computing system is still practiced in the Ethiopian Orthodox Church few monasteries. This system will be pointed up in my paper.

There are several difficulties to come across the foundation of the calendar, its way of preserving, converting it from traditional to scientific, its relation with magic, superstition, medicine. Harvesting, time of slashing trees, and others were practiced in Ethiopia. People of the past time were depended on fixing days to prevent their agricultural products from weevil.¹⁷ These topics will call attention to and converse in this plan.

Generally the statement of the problem behind this research are:-

1 The Ethiopian calendar category

The Ethiopian calendar has been assumed to have been derived from the Coptic calendar .” The Ethiopian Orthodox Church Calendar scholars.¹⁸

“The Ethiopian calendar has been assumed to be completely a Julian system.¹⁹

There is a further claim that demonstrates it is incorrect basing on some similarities between the above calendars to reach to the conclusion that the Ethiopian calendar was adopted from those calendars.²⁰

It is also suggested by some writers that there are similarities between the Jews, Zoroasters, and the Ethiopian calendars.²¹

2. Sorting the whole parts of the Ethiopian calendar with the Ethiopian Orthodox Church itself is incorrect, because as the Church embraced the early wisdom of the people and shaped them for religious purposes.

Thus, it is crucial to investigate and clear whether these observations hold water or not.

1.3. Research Question

Where and how was the origin of Ethiopian calendar, time reckoning, time scheme, and calculation of months?

- What are the similarities and variations between the Julian, Ethiopian, and Coptic

¹⁷ ጌታቸው ሃይሌ (2006) “ባሕረ ሃሳብ” 2ኛ እትም፣ ገጽ 66.

¹⁸ መሠረት ስብሐት ለአብ (1981) “ትውፊታዊ ሃሳብ ዘመንና ታሪኩ” ገጽ 10

¹⁹ ቢ.ቢ.ሲ. በጎሩይ ስሜ የተጠቀሰ፣ “ትክክኛው የኢትዮጵያ ዘመን አቆጣጠር” ገጽ 30, 2000 ዓ/ም)

²⁰ ዝኒ ከማሁ

²¹ ተክለ ጻድቅ መኩርያ (፲፱፻፶፰ዓ/ም) ከጣኦት አምልኮ ወደ ክርስትና ገጽ ፳፰

calendars?

- How was ancient people in Ethiopia involved on calendar foundation?

1.4. General and Specific Objectives

1.4.1 General Objectives: - general objectives of this thesis are:

-To find out the foundation of Ethiopian calendar as well as to indicate about the involvement of foreigners, religious scholars and ancient people in the Ethiopian calendar.

- To illustrate the temperament of Coptic and the Ethiopian calendars.

1.4.2 Specific Objectives:

The specific objectives of this writing will rotate mainly

- To motivate other researchers to search on this designation
- To show the currently used calendar tie Magic, Zodiac and astronomy.
- To elaborate the solar. Lunar and lunisolar characters of the Ethiopian reckoning time and other related basic issues in calendar.

1.5. Significance of the Study

The connotation this research is indicating the Ethiopians involvement in the foundation of their calendar. Their contribution to the foundation of other elements, which are related to calendar generally the consequence of this thesis with the following.

- This study will pave the way to documentation

-It will stimulate the way for others researchers.

- This paper will produce little knowledge on Ethiopian calendar, through this process of indicating its similarity, and variation with other calendars.

1.6. Research Methodology

The method, which will use in the writing of this research, is quantitative approach. The reason that I preferred to drive my writing in quantitative approach is due to, the research tools that selected to perform this thesis are content analysis and interview. Content analysis is stand on all primary data, which touch the scope of this research. Interview is the other tool, which enhance the path to the goal of the last finding and used as secondary data.

1.6.1 Data gathering

- **Secondary Data mainly, Interviews:-** interviews in this writing will focus on:-

- 1 Church calendar scholar of the Ethiopian Orthodox Church.
2. Qualified scholar in the history of the EOTC and allied concerns
3. Coptic Orthodox church agent, will the interviewee

Documents that used as primary data will various books from Coptic and Ethiopian churches, parchments writings on calendar in the monasteries., thesis's and senior essays on calendar, hard and soft copy books related to my writing, magazines and news-papers, internet sources, unpublished writings, and others will the main secondary data in this thesis.

The famous book of calendar 'Äbušakər for most clergies will take the lion share on analyzing and data gathering in this research. There is mistake on understanding the book of 'Äbušakər. When we say 'Äbušakər it indicates both the name of the book and individual. 'Äbušakər was an Egyptian clergy who distinguished himself as a theologian, a historian, and a linguist in perfect command of qualified both Coptic and Arabic languages. His work on the dates of the patriarchs shows that he was equally proficient in mathematics and astronomy. His school of thought had become widely accepted and became an important source for calendar calculation in Ethiopia.

To Cleary designate, 'Äbušakər is both the name of an individual person, also the body of teachings and studies related to the calendar. To the extent that those qualified in calendar computation receive the title "master of 'Äbušakər"

1,6.2 Data Analysis

Content analysis may take a huge part in this research. The content analysis in this research will fully track on qualitative approach.

Using qualitative system will provoke to examine the various views of books which are written by various scholars about the foundation of our colander. Interviews and content analysis will chiefly depend on qualitative methods. The calendar numerical components will compute with numerical reckoning routines.

1.7. Limitation and Delimitation

1.7.1 Delimitation.

The scope of my research will be focusing on the findings on the root of Ethiopian calendar, and its connections and variation with Julian, Coptic, Jewish. The distinction and similarity will explained directly or indirectly. As Calendar is a long time process with the scope deep and wide, issues that do not touch my research truck will be abandoned.

1.7.2 Limitation

- The lack of getting scientific calendar materials on the Ethiopian orthodox libraries in comparison to traditional calendar materials.
- The hidden writing style of calendar books in the Ethiopian Orthodox Church and the difficulty to be aware of them without other guidance.
- Due to the impact of thefts and scriptures trafficking, the keepers of these scriptures refuse to open their door for everyone who tries to investigate the concept that detailed on them. This will cost superfluous time and money expenditure. Shortage of finance and others are limitation.

Chapter two

2. Review of Related Literature

2.1 Important Books on the Ethiopian Church calendar

The Mārāha ‘Ewər parchment book, that preserved in Hayqə ’əstefanos Monastery in Southern Wallo province, said as it was written in the reign of Zāra Ya‘qob. To the researcher, this books seems the copy of the original one, because of its clear and bright pages. This book covers the chronological years from Adam to the birth of Christ.²²

Hour allotting system based on shadow²³, the number of languages after scrambling²⁴, and the lights of moon from first day that increases 48 mints (four kekərosə)²⁵, The reckoning of Jew Passover,²⁶ and other most calendar issues are covered in this book. This book used as the focal point to all writers, who tried to research on the Ethiopian church calendar. ‘Äbušakər is a book that cover most issues in Ethiopian church calendar. The book embedded chronology of patriarchs of the Coptic calendar, the Jew and Romans reckoning ways on Passover and Easter, the twelve stars, which used as zodiac, are few among the issues that are written in the book.²⁷

The calendar books written by Getačāw Hayəle “Bähire həssab” ባህረ ሃሳብ” and Mäśśärət Səbəhätäl’äb’s Təwəfetawe həssab zämänəna Tareku ,ትውፊታዊ ሃሳብ-ዘመንና ታሪኩ” could be taken as the main literate review books.

Getačāw Hayəle ‘s book is basically focused on the characters of Ethiopian reckoning times, days, Years...with feasts and fasting. Here the author of the book tried to employ methodical manipulative techniques to formulate it easy to everyone who competent the primary school.

The book also offered us justification on the reasons to the variations on the Julian, Gregorian, Coptic, and Ethiopic calendars. Division fractional functions of hour are, well expressed.

The other book, which closed to this research, is Mäśśärət Səbəhätäl’äb’s book that pursues very Critical and genuinely writing arrangement on Ethiopian church calendar. The writing style and the way of expression in this book is mysterious to understand easily, due to the authors crack to

²² B₂₀ IV-IS, “መርሃ ዕውር”(በዘርዓ ያዕቆብ ዘመን የተጻፈ.፣ በባልም ይህ መጽሐፍ ከዋናው የተገለበጠ ይመስላል)፣ ሐይቅ እስጢፋኖስ ገዳም፣ ገጽ 28

²³ *Ibid* page 48

²⁴ *Ibid* page 13

²⁵ *Ibid* page 17

²⁶ *Ibid* page 31

²⁷ 004,MS አቡ-ሻክር,(፲፱፻፹ ፩ዓ/ም) ጠ/ቤ/ክህነት ቤ/መጻሕፍት EMDA 00171.

hide from view matters that escort him out of his faith.²⁸²⁵

I perceive the first G'ez Amharic translation book of Ābušakər, which translated by group of Addis Ababa's Holy Trinity Cathedral training center did tiny to exemplify the entire documents of ancient parchment book of the original Ābušakər. However, it ceased to cover the whole topics. Only few matters of the original one pointed toward in this translation. The observance of Easter, the reckoning about the day of the Jews Passover other Christian and Jew feast days are among the translated chapter in this book²⁹.

I observed Hərüy Səme's book Təkəkälä nāw Yä'etəyopəya Yāzāmānə məquteriya (**ትክክለኛው የኢትዮጵያ የዘመን መቁጠርያ**) as critically refused claims of foreign, few Ethiopian writers and Medias that connect the foundation of Ethiopian calendars with Julian calendar.

The author exposed resemblance and he completely damaged the argument of Getačäw Hayələ's and other writers views on the foundation of Ethiopian calendar.²⁸To him the Ethiopian calendar did not derived from Julian calendar.³⁰

I make out the book of the two church calendar writers, 'Asərat Gäbərəmarəyam and Gäbərəhəyəwot Mähari as bring up in their book "yāzāmānəna 'Aqotātär" **የዘመን አቆጣጠር**", explicated the foundation of Julian, Coptic, Gregorian, Jews etc.³¹

The main intend of my paper is to research this variation and to find out the reasons of variations. It is impossible to reject the circumstance on the Gee'z language, which mingled with Hebrew, Arabic and other Semitic languages. This may be the same to calendar. Denying any adoption from outside and accepting its origination completely from outside will leads to mistake. Finding its root without bias can prevent this mistake. In this paper, I will follow impartial writing way to give little about the Ethiopian calendar.

I spot Mārāha 'Ewər the book that widely used in reckoning the Ethiopian church calendar. Reference in this book states as the book was written in the time Zāra Ya'qob. Whereas, it looks like as this book was copied from the original one. This book preserved in Hayqə 'əstefanos Monastery. The book embedded the narration of the scrambling of languages, the Ethiopian zodiac, the epact, traditional division of time, and other portion on calendar.³²

²⁸ መሠረት ስብሐት ለአብ (1981) "ትውፊታዊ ሃሳብ ዘመንና ታሪክ" ገጽ 175.

²⁹ "አቡሻክር የቀን መቁጠርያ" (፲፱፻፳፪ ዓ/ም) የቅ/ሥላሴ ድርሰት ክፍል።

³⁰ ገሩይ ስሜ (2000 ዓ/ም) "ትክክለኛው የኢትዮጵያ ዘመን አቆጣጠር" ገጽ 30-37.

³¹ ገሩይ ስሜ (2000 ዓ/ም) "ትክክለኛው የኢትዮጵያ ዘመን አቆጣጠር" ገጽ 60-65 .

³² አስራት ገ/ማርያምና ገ/ሕይወት መሐሪ (1987 ዓ/ም)፣ ገጽ 13-23, B 20 IV-IS, ሐይቅ እስጢፋኖስ ገዳም፣ ገጽ 23

In Ethiopic tradition, the term “book (Mäṣəḥāf መጽሐፍ) applies variety of treatises *Hätäta* (ሐተታ). Book of Enoch, Mäṣəḥāf Henokə (መጽሐፈ-ኄኖክ), The book of Jubilees Mäṣəḥāf Kufale (መጽሐፈ-ኩፋሌ), (Dedəsaqeləya ዲድስቂልያ), Bähəre ḥässab (ባሕረ-ሃሳብ) Zena ’Arə’esətä ḥässab ዜና አርእስተ ሃሳብ, are the term given to various books of calendar. The mostly known books that coded as calendar book are ’Äbušakər አቡሻክር), Säyedə Wälädä Bätəreqə (ሰዲድ በጥሪቅ), Marəqos Wälädä Qäməbär (ማርቆስ ወልደ ቀምበር,) Mārāha ‘Ewər (መርሐ ዕውር) and Haasabä Bezän(ሃሳብ ቢዘን) . However, only two books, ’Äbušakər አቡሻክር), and Mārāha ‘Ewər (መርሐ ዕውር) are widely used and available. This is why the way of this research for the most part depends on these books.³³

2.2 Names of the Ethiopian calendar

The Ethiopian Orthodox Church calendar has different names. Bähəre ḥässab, Mārāha ‘Ewər, Yäqutər Təmährət, ’Äbušakər, are names to Ethiopian calendar. Säyedə Wälädä Bätəreqə, Mahəbug Mäbänəgawə , Jews, Geyorəges Wälädä ’Amedə, John Chrystotom, ’Äbušakər Wälädä ’Äbebəwere among prominent scholars and mostly known writers in calendar.

2.2.1 Bähire ḥässab :- (The thought of a sea)

Here the name pictured comparing the depth and wideness of the sea with calendar due to the contemplation of a person’s mind entrance to boundless realm during calculation.³⁴

According to few writers, this way of calculation is the simplest and easy way in comparison with the rest. Few writers like Habətä Mareyam Worqəneh wrote as the Ethiopian scholars established the reckoning systems of the Bähire ḥässab ‘s.³⁵

ባህረ ሃሳብ ይህም ኢትዮጵያ ቅምር ይመስላል። ፍቺው የሃሳብ ባሕር ሲሆን ብዙ መመራመርና መራቀቅ የሚጠይቅ ነው። አጽዋማት የሚውሉበትን ከባሕረ ሃሳብ ውስጥ ድሜጥሮስ ደረሰው።³⁶ Bähire ḥässab seems Ethiopic reckoning style. It means the sightaion of the sea, that needs deep observation and abstruse. St. Demertius founded this computing of fasting days.

Unlike the Ethiopian orthodox church scholars, apparently the encyclopedia Aethiopia affiliated astronomical and metrological works as the body of Bähire ḥässab as demonstrated below.

Bhaire Hassab (‘Sea of Computation’ or Computus) is the designation of a type of calendar or astronomical treatises, dealing primarily with the mathematical system used by the Coptic and Ethiopian Orthodox Churches for determining their movable feasts and fasts. Manuscripts under this title can contain different with a great variety of topics, ranging from short computus summaries to larger works with astronomical and meteorological tables and numerous important historical .³⁷

³³ www.ethiopianorthodox.org. Calendar books of the Ethiopian Orthodox Tewahido Church. Feb.2016

³⁴ መሠረት ስብሐት ለአብ (1981) “ትውፊታዊ ሃሳብ ዘመንና ታሪክ” ገጽ 8.

³⁵ ዝኒ ከማሁ

³⁶ ሃብተ ማርያም ወርቅነህ(፲፱፻፷፪ ዓ/ም), “ጥንታዊ የኢትዮጵያ ትምህርት፣” ገጽ ፪፻፴፯.

³⁷ Ullhig, (2003). Aethiopic encyclopedia volume volime I page 445

Most Ethiopian Orthodox Church traditions emphasize that the Bāhire ḥāssab system was first introduced by Moses. Thereafter, revisions made by the Apostles and adopted by Archbishop Demetrius of Alexandria (ca. 230–40 A.D.)³⁸

2.2.1 Mārāha ‘Ewər (Guide for the Blind)

Mārāha ‘Ewər is the calendar book, which mull over as a guide in the process of calculating and reckoning. This book is the reckoning style, founded by Ethiopian Orthodox scholars gathering from various related sources³⁹. The name itself illustrates that the book used as a tool to lead blind (illiterate) person to be aware of calendar.

The church scholars like Abba wälädä Mādəḥən agreed as true, blind in a sense means not to segregate physical blindness rather than illiterateness. Because there were prominent blind church scholars in the past, and there are, still active church scholars.

2.2.2’Äbušakər

As was tried in the subsequent pages, ’Äbušakər is the name of Coptic cleric who was qualified in mathematics and astronomy, to shape and give deep explanation on Coptic calendar. He became famous in the Ethiopian clergies due to his book Kitab at-tawariò (of the eras’ [or: ‘Chronicles’])⁴⁰. His book, which was written in Arabic and translated to Ge’ez by ’Ečäge ’Enbaqom, most likely in 1529/30 and 1536/37.⁴¹

The Ethiopian tradition added to the Arabic one in this the book. In the Bätä Kəḥənät the See of the Ethiopian Orthodox Church, also in the ancient monasteries like Hayqə ’Estefanos, Kəbəran Gäbərə’el, and in Gunədagunəd Marəyam, there are parchment books of ’Äbušakər translated from Arabic to Ge’ez. Most writers including this researcher used to obtain detailed information from this book. Calendar, religious and historical chronologies, astronomy are probed in this book.

All books, written on calendar, i.e. ’Äbušakər, Mārāha ‘Ewər and Bāhire ḥāssab are to avoid fragmentation of feast and fasting days. Tough they are variable in reckoning system the final output of all of them is the same. The encyclopedia Aethiopica hold up this in the presiding way:

The Ethiopian teachers also refer to the system of the B.h./Abušakér, a reference to one of several sources for the system. The system fixes three primary dates: (a) it determines the date for Easter by relating it to the Jewish Pasch which also falls on different dates each year; (b) it makes sure that the Crucifixion falls on a Friday (Good Friday) and Easter or Resurrection on a Sunday; following the decision taken by the Council of ÷Nicaea in 325 A.D., it makes the Passion Week (the Christian Passover) follow the

³⁸ *Ibid*

³⁹ ሃብተ ማርያም ወርቅነህ(፲፱፻፳፪ ዓ/ም), “ጥንታዊ የኢትዮጵያ ትምህርት” ገጽ ፪፻፴፯

⁴⁰ Uhlig,S (2003). “ENCYCLOPAEDIA AETHIOPICA” *volume I page 445*

⁴¹ *Ibid*

Jewish Pascha.⁴²

Generally, though there are many calendar books in Ethiopian tradition, the most known books of calendar are the above. The Ethiopian Orthodox church accepted these book as the book of calendar.(Yəqutur Mäsəhaf)⁴³

Both the Ethiopian and the Coptic churches have the same indication on the two prominent ancient calendar scholars, St. Demetrius I, who was the 12th Patriarch of Alexandria and Abušakér. Every researcher who undertakes to investigate about calendar should study the work of these scholars. Both the Ethiopic and Coptic synaxarium looked alike, though the scope and the way of explanation look as if poles apart.

Abba Demetrius is the Coptic Patriarch, believed as the one who shape the movable fasting and feast days including Easter. According to Ethiopian Orthodox Church, God revealed him this reckoning way after long fasting and solitary praying times. Coptic synaxarium, on the Twelfth Day of the Month of Babah(Ethiopian *Ṭəqəmt*) October 22, traced the life and the work of him. As the Ethiopian synaxarium was translated from Coptic, this event is also available in the Ethiopian text though the depth is limited in comparison to the Copts. The next paragraph is the Coptic synaxarium confirmation:

He (Demetrius) established the reckoning of the Epacts, by which the dates of fasting were determined on a fixed basis. Some of the Christians used to celebrate Easter on the fourteenth of Neesan (April) and that meant they celebrated with the Jews, not recognizing that the Christian Passover was to be in memory of the Resurrection of the Lord Christ which was after the Mosaic Passover. For that reason, Pope Demetrius took interest in establishing fixed bases for fasts and Christian holy days. He appended the Holy Fast to the Passion Week.⁴⁴

However, Habətä Mareyam Worqəneh ignored the above out-look. To him, though St. Demetrius was mentioned as the Alexandrian patriarch, he was not the founder of reckoning days of fasting & feasts.

To him though scholars articulated as St. Demetrius was the 2nd century bishop and the founder of the Bähire hässab reckoning system, no evidence is indicates as he was the founder of the Bähire hässab⁴⁵ despite, the Ethiopic church preserved, as St. Demetrius invented a special calendar known as the “Apokty calendar”, which was used to determine the glorious Resurrection in the every year and it used currently in the Ethiopian sealed Orthodox Church.

⁴² Uhlig, S (2003). “ENCYCLOPAEDIA AETHIOPICA” volume I page 445

⁴³ www.ethiopianorthodox.org. Calendar books of the Ethiopian Orthodox Tewahido Church. Feb.2016

⁴⁴ www.suscopts.org/pdf/copticchurch/hx6.pdf. Coptic synaxarium April 2016

⁴⁵ ሃብተ ማርያም ወርቅነህ(፲፱፻፳፪ ዓ/ም), “ጥንታዊ የኢትዮጵያ ትምህርት፣” ገጽ ፪፻፴፯.

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1. Method of the study

This research aspires to establish the foundation for the Ethiopian calendar. In so doing, the research attempts to analyze how the reckoning of time was constructed during Ethiopia's earlier history. Moreover, in an attempt to shade light on how a given cultural constitution of a society might contribute to influence the conception and evolution of time reckoning system. Comparing and contrasting the Ethiopian with Coptic and Julian calendar systems of time reckoning would benefit the research to analyze cultural influence on time management. Accordingly, the method applied for this research will progress on the trace of qualitative method. However, as the title of the research clearly indicates, the qualitative approach will take part in this thesis, subsequently in going through the calculating and wrapping of numerical quantities will demonstrate the subtle and intricate beauty involved behind the art of in time management.

Testing pre-determined hypotheses and produce broad results is necessarily the focus of quantitative approach.⁴⁶, while in the case of qualitative methods, identifying and surveying insubstantial factors such as cultural expectations, gender roles, ethnic and religious connotations, and individual thoughts are offered.⁴⁷This is the cause that directs the path of the investigation to cover mostly qualitative approach.

3.2. Method of data collection

Data would be chiefly accumulated through content analysis. Thus, ancient and recent books would be the main sources for data; 'Äbušakər and Bähire ḥässab are innermost to this search. Moreover, other books published in recent times through different authors will also be analyzed. However, these data would be complemented with in-depth interview.

3.3. Data analysis and interpretation

Data gathered through content analysis and interview would be interpreted carrying great weight, thoroughly categorizing the data into various unites and themes. In addition, at times the researcher would conduct a narrative analysis of qualitative data. Summarizing, the researcher would be engaged into numeric analysis using simple mathematical computation.

⁴⁶ [http://www.acaps.org/img/Qualitative and quantitative Research Techniques](http://www.acaps.org/img/Qualitative%20and%20quantitative%20Research%20Techniques.pdf). May 2012,

⁴⁷ *Ibid*

Furthermore, to this, qualitative research method, interview data, observation data, document analysis would undergo.⁴⁸

Qualitative research is exploratory, for it is used when we do not know what to expect, how to define the issues.⁴⁹. Streaming of research method in this paper through qualitative method is due to the lack of defining the Ethiopian calendar, as it is the case with the Coptic, Julian, or Local.

3.4 Research Setting, Population, and Selection Procedures

The two oriental Orthodox churches, i.e. the Ethiopian, and the Egyptian Coptic calendars are selected as the focus of this research. However, despite it is not the focus of this research, to compare and contrast the Julian and Jew calendars will assessed.

3.4.1 Interview

The interview in this research will wrap three different components. These three kinds of interviews are selected from distinguishable vocations. The first one is from the Coptic Church scholar. It is believed that a Coptic concept might have some impact on the Ethiopian church calendar formation. That's why a representative from the Coptic Church was selected to be the interrogator. The Ethiopian Orthodox Church scholars have their own explanation about the formation of the calendar. Sometimes the claims are torching supplementary documents from Coptic Church, who consider themselves as the founders. This leads the researcher to find neutral ground. Due to this, one secular- scholar selected as part of the interview. The larger collection of documents on the Ethiopian calendar system are preserved in the Ethiopian Orthodox Church. The Church has her- own role for the foundation of current calendaric system. Hence, the inclusion from the Ethiopian Orthodox Church scholar included in my interview. The way of interview driven by recording the voice of the interview, then converting it written forms.

3.5 Why the Ethiopian and the Coptic Oriental Orthodox Churches selected as the focus of research?

The researcher is interested to investigate more about Ethiopian calendar. This is due to the Researcher's background as a student of Äbušakər at various schools of the Ethiopian Orthodox Monasteries.

As discussed earlier, the main goal of this research is to explore the principle behind the

⁴⁸ <http://www.acaps.org/img/Qualitative and quantitative Research Techniques May 2012>

⁴⁹ <http://www.acaps.org/img/Qualitative and quantitative Research Techniques May 2012>

Ethiopian calendar. Its pedigree and connection with other calendars will also be part of the research. Culture is not something static. The development of culture is constructed as the society obtains from and grants to others; the beliefs and customs of countries. The linkage of the culture will occur because of the close geographical proximity of the counties or communities having to share similar ecological conditions. Thus, the nearest country that share many cultural and religious antiquities with Ethiopia is Egypt.

The Egyptian Coptic church had claimed the status of sole custodian for the Ethiopian Orthodox church for about 1600 years, and sending bishops in advance as an endowment. Egypt's significance to Ethiopia's history became innermost, since the beginnings of the Axumite period, and distends of Christianity into the latter in the first half of the fourth century. This link was persistence from 334 AD until 1959.⁵⁰

Both countries are in close proximity to the Middle East, in which the world's largest concentration institution of religionist. The world's longest river Nile also escalated the relation of both states, which regarded as he hearts of one of the earlier world's civilization was originated. Writing, brewery, calendar, painting, etc were the main manifestations of Egyptians civilization, as the heritages of the country still utters. Egyptians were people who provided place of resettlement for Christianity. Jesus Christ and His parent running away from the persecution of King Herod, as signified in the Bible, found refuge in Egypt. Matt. 2:14-15

Monastic life was also stumbled in Egypt⁵¹.The Egyptians are concerned in Ethiopia's positive and negative collision and progress since both states known as autonomous nations. Ari Houston in his book, "Wonderful Ethiopians of the Ancient Cushite Empire", underlined the link of the two nations in the subsequent way:

The excavations of Petrie revealed in Egypt indicates that the remains of a distinct race that preceded the historic Egyptians. The earliest civilization was higher than that of the later dynasties. Its purer art represents an "Old Race" that fills all the background of the pre-historic ages. It colonized the first civilized centers of the primitive world. The ancients called this pioneer ram, which lit the torch of art and science, Cushite Ethiopians, the founders of primeval cities and civilized life.⁵²¹¹

To underscore, in the next part it proved the bond flanked by two states in the time of Pharos.

In the "Second Tale of Khamuas" there is a contest between the Ethiopian and Egyptian magicians. Amongst other tests of superiority, the Ethiopians bring writing as a challenge to the Court of Pharaoh. This has to be read without opening the letter or breaking the seal. Then said Si-Osiris to his father, "I shall be able to read the letter that was brought to Egypt without opening it and to find what is written on it without breaking its seal". The father asks his son to demonstrate the sign that he can do this. Si-Osiris answers "Go

⁵⁰ Uhlig,S (2003). "ENCYCLOPAEDIA AETHIOPICA" volume II page 240.

⁵¹ <http://www.ccel.org/ccel/schaff/npnfhtml> Homlies on the statutes April 2016

⁵² Houston, D(2008)"Wonderful Ethiopians Of The Ancient Cushite Empire". <http://www.hh-bb.com> May 6 20016

to the cellars of thy house every book that thou takest out of the case I will tell thee what book it is and read it without seeing it". This he does, and then he shows the superiority of Egyptian magic over the sorceries of the Ethiopians by reading the contents of the letter.⁵³

This pre- Christianity tales obviously proves the relation between Egypt and Ethiopia. The period of Christianity braced a tie between the two nations. Atteya in his book "the Coptic Contribution to Christian Civilization", presented an idea about the Egyptian influence during the beginning of Christianity in Ethiopia. To him

Copts, incorporate at least twenty million Ethiopians, more than five million other Africans and another million of mixed racial origins in other continents.⁵⁴

3.6 Egypt and short summary

Egypt is a country in North East Africa with an Area of 1,001,450 sq km. According to July 2015 inference, the number of Egyptian Population reached 86,487,396. Pertaining to religion, 90% of Egyptian population are Muslims (mostly Sunni).while the number of Christians in Egypt, combined from different Christian denomination like Coptic Orthodox, and(other Christians, Armenian Apostolic, Catholic, Maronite, Orthodox, and Anglican) 10%.⁵⁵

3.6.1 Egypt and the Coptic Church calendar

Christianity launched to Egypt between 43 and 48 AD by St. Mark, the Evangelist. This situates the Coptic Church one of the elderly church in the world.⁵⁶ The Greek leaders conquered the Alexandrian church until Egyptians establishes their own patriarch in 248 AD The Ordination of patriarch Dionysius facilitated the Coptic Church to evangelize the local people in their own language. ⁵⁷16 In 641, Egypt was conquered and became a part of the Islamic empire, after which it took roughly 200 years of conversions for the Copts to become a minority in Egypt (Purcell 434). This means , the Coptic domination in Egypt wrecked in 9th century AD.⁵⁸

3.7 Ethiopia and short side view

Ethiopia is positioned in the Horn of Africa, surrounded in the North and Northeast by Eritrea, in the East by Djibouti and Somalia, in the South by Kenya and in the West and South- West by the

⁵³ Massey,G (1907) "Ancient Egypt" Page 121 www.theosophical.ca/.../

⁵⁴ Atteya,(2016) "The Contribution to Christian Civilization" page 3 www.saint-mary/.net/coptic.../ April 2016

⁵⁵ www.worldatlas.com/af/eg/where-is-egypt.html Where is Egypt located? May 2016

⁵⁶ Leveugle,(2016) "The Copts and the Egyptian State" page 15.www.urop,uci.edu/.../ April 2016.

⁵⁷ *Ibid*

⁵⁸ Cited by Leveugle,(2016) "The Copts and Egyptian State" page 15 www.urop,uci.edu/.../ April 2016.

S. Sudan and Sudan. In view of the fact that Eritrea's sovereignty Ethiopia has become a land-locked power. It covers an area of ca. 1,106,000km²; enlarge from 2°30 'N to 15° N and from 33° E to 48° E.⁵⁹

Ethnically Ethiopia's inhabitants are 32.1%, Oromos, 30.1%, Amharas and 6.2%, Tigrai (1994 census) Ethiopians are 60.8% Christians, (50.6% Orthodox 10.2 % Protestant) 32.8% Muslims and 6.4 traditional religion. Amharic is the most spoken language in Ethiopia covering 32.7 and Oromic language cover 31.6 %, Tigrai 6.1%.⁶⁰

3.7.1 Ethiopia and Widely used Calendar

In Ethiopia, the previous the Ethiopian Church calendar is presently used as the national calendar. The reason is that, it was dominant in the country for centuries and this leads it to become familiar to the people who use it use for long time. Whether someone is religious or not, calendar puts its impacts on the daily life practice in Ethiopia. Seasonal classification takes the main part in daily practice of farmers and clergies. Farmers are dependants on seasons to farm, plant, and harvest. Similar to the Coptic Church, in the Ethiopian Orthodox church all four season comprise their hymens frequently.⁶¹ Seasons, months and days lead the clergies to change the types of service they render according to what had been canonized by the forefathers of the Church.

Farmers also maintain the point in time to avoid their crops from weevil. Generally, Clergies and ordinary people hold up their life through the surge of calendar.

⁵⁹ Uhlig,S (2003). "ENCYCLOPAEDIA AETHIOPICA" volume II page 393

⁶⁰ www.theodora.com/wfbcurent/ethiopia2016 Ethiopia. April 2016

⁶¹ www.ethiopianorthodox.org. Ednglish The Ethiopian orthodox Tewahido church. April 2016

CHAPTER FOUR

4. DATA PRESENTATION, INTERPRETATION, AND DISCUSSION

4.1. What is Calendar?

The word Calendar has its origin in the Latin, the word *Calends* or *Kalends* denotes a method of distributing and measuring time, adopted for use in civil life. A Calendar may be defined as a system of reckoning time over extended length of time combining various convenient periods of time⁶²

4.2. Types of Calendars

The three major Calendars currently used in the world are the solar, lunar and luni-solar calendars. The Solar Calendar is based on the yearly motion of the earth around the Sun. The Roman (Julian), French (revolutionary), and Gregorian (international) calendars are recognized as solar calendars.

The Lunar Calendar is based on the monthly cyclical phases of the Moon, around our planet. It is used to calibrate the passing of time, although it lapses by a few days since it is unable to convey the yearly motion of the sun relative to the earth's rotation. The Islamic *Hejira* Calendar is a pure example of lunar calendar that helps to celebrate the passing of time for all who prescribe to the Islamic faith. The third type of calendar, Luni-Solar Calendar, follows both the monthly motion of the Moon and the yearly motion of the Sun relative to the rotation of the earth. The Jewish and Babylonian calendars are example of luni-solar calendars system. The Ethiopian and Coptic calendars fall under the third category.⁶³

The most important and fundamentals elements in Ethiopian calendar are Era, Year, Month, Week, Day, and Hour. These elements are the tools or fundamental notions used to construct a full calendar. It is impossible to have an era of the calendar without the combination of years. The foundation of Days, Months, and Year is based on the rotation of the Earth on its axis, and Year mainly based on the revolution of the Earth around the Sun. whereas, calibrating a Month is Based on the revolution of the Moon around the Earth.⁶⁴

⁶² www.packolkata.gov.in/INDIAN Calendars. March 2016

⁶³ *Ibid.*

⁶⁴ Conte D (2007). Calendar. www.astronomy.Org.gg. May 2016

4.3 elements of the calendar

Different calendars of the world apply their own way to construct their elements of the calendar. The main elements in Ethiopian Orthodox Church calendar are-

- Hour: Sä‘at ሰዓት 60 Mnts, which is equivalent to 5 Kekərosə, ፩ ኬክሮስ⁶⁵
- Day: Qänə ቀን፣ 12 hours and ‘Awədä ‘Elätə ዓውደ ዕለት 24 hours that equivalent to 60 Kekərosə ፩ ኬክሮስ፣⁶⁶
- Month: ‘Awədä Wärəḥ (ዓውደ ወርሃ፣ (ወር) which is 30 days of solar and 29/30 days of lunar.⁶⁷36
- Season: Mägäbätä ’Awurəḥ (መገብተ አውራጎ፣ ወቅቶች፣) consist three months of its own climatic period. Summer, winter, autumn and spring (ክረምት kəramət ቢጋ bāga፣ ሻዳይጫ ጸደይ፣ መከር Mākärə) are the seasons and contain 91 days each.⁶⁸
- Year, ‘Awədä ‘Amät ዓውደ ዓመት) 365 ¼ solar and 354 days of lunar.⁶⁹

Emmanuel Fritsch has his say regarding Ethiopian hours of the Day reckoning system:

The hours are tot up roughly according to the Roman system of 12 night hours and day hours. The Romans had an invariable number of 12 hours either of night or of daytime. In turn, the day hours were all of equal length, as also were the night hours... In simple fact, seven o'clock in Western time is one o'clock in Ethiopian time. While the civil day begins in the morning, as did that of the ancient Egyptians and the Romans, the liturgical day begins on the eve at sunset, like the Jewish and Greek days. Fasting days are counted according to the civil days. The seven-day week was adopted from the Jews.⁷⁰

4.3.1. DAY

Day is a period of 24 hours, or according to Western allotting way, a period from midnight to the following midnight.

Whereas, according to the Ethiopian calendar, day is a measure of time, which contains full twelve hours of light time, and twelve hours of dark time to the part of night. The Holy Bible also alike to this Ethiopic classification of hours in a day. In the gospel of John and Matthew the

⁶⁵ ያሬድ ፈንታ (2004). “ባሕረ ሃሳብ” 2ኛ እትም፣ ገጽ 156

⁶⁶ ዝኒ ክሞሁ.

⁶⁷ ጌታቸው ሃይሌ (2006) “ባሕረ ሃሳብ” 2ኛ እትም፣ ገጽ 34.

⁶⁸ ያሬድ ፈንታ (2004).”ባሕረ ሃሳብ” ገጽ 164

⁶⁹ መሠረት ስብሐት ለአብ (1981) “ትውፊታዊ ሃሳብ ዘመንና ታሪኩ” ገጽ 178.

⁷⁰ Fritsch, E (1999). “The liturgical year and the lectionary of the Ethiopian church” Page 74
Pwtw.pl/wp-content/.../wst/

Jew allotting hours, in a day specified from the word Jesus saying, “*Are there not twelve hours in a day*” John 11:9. The twelve hours allotting to a day illustrated in the proverb of Jesus Christ on the gospel of Matthew 20:6-12.

In his classification of day, Emmanuel Fritsh, botched to indicate the connection between the Ethiopian and Jews system of reckoning days. Whereas, Girma Demeke looking in to the origin of the word Sabbath (Saturday) underlies the connection between the two traditions in reckoning time.

Table 1: Days of the week and meaning in different calendars

days	Ethiopic Gə'ez & Amharic meaning	English	Arabic	French	planet
Sunday	'Ehudi Ge.& Amha. First or one	Sun	<i>Alahad</i>		Sun
Monday	<i>Sānuḃ</i> , Seño 2 nd day	Moon	<i>alithnayn</i>	<i>Lundi</i>	Moon
Tuesday	<i>Śālusə</i> , <i>Maksāño</i> Third or three ማግስተ ሰኞ ⁴²	Tiw, northern god of War	<i>athlatha</i>	<i>Mardi</i>	Mars
Wednesday	<i>Rābu'e</i> Ge.& Amha, forth day	Woden, Anglo-Saxon god of war	<i>Alarba,a</i>	<i>Mercredi</i>	Mercury
Thursday	<i>Hamusə</i> Ge.& Amha 5 th day or 5	Thor, Scandinavian god of thunder	<i>Alkhamis</i>	<i>Jeudi</i>	Jupiter
Friday	' <i>Arəbə</i> Ge.& Amha , entering of Sabbath(ዓርብ /ገባ)	Scandinavian Anglo-Saxon god of love	<i>Aljumah</i>	<i>Vendredi</i>	Venus
Saturday	Qādamə Qidame , Former Sabbath.	Saturn	<i>Alsabt</i>		Saturn

Table source: researcher complication

ቅዳሜን “ሰንበት” በሚለው ስያሜ መጥራት በመላው አለማችን በጣም የተስፋፋ ነው። ከሴም ቋንቋዎች ውስጥ ለመጥቀስ ያህል ይህ ቀን በአረብኛ አስ - ሳብት ፣ በእብራይስጥ የም ሻባት ፣ በሲራይክ ሻብቶ / ሻብታ ይባላል። ይኸው ቀን በቅብጥ ሳባቶን / ሳቫቶን ፣ በጣልያንኛ ሳባቶ ፣ በስፓኒሽ ሳባዶ ፣ በፈረንሳይኛ ሳሜዲ ፣ ዘመናዊ ግሪክ ሳባቶን / ሳቫቶ ነው።”⁷¹ Calling Saturday as Sabbath is the widely used way in the world. Semitic languages like Arabic word for Sabbath is Al sabt, Hebrew Yom Shabath, French, Chabat, In Spanish it is el sábado and in Italian sabato, and modern Greek this day is called Shabaton.

As designated in the table above, the character of the Ethiopian calendar is both lunar and solar (lunisolar). The lunar calendar is mainly depended on reckoning the day of feasts and fasting. As described by Aethiopic encyclopedia:-

Abäqte A.አበቅቴ(sometimes አበቅቴ,‘epact’), derived from the Greek **εποικτι** also denoted as አበቅቴ ወርኅ, abäqte wärih ‘lunar epact’ (in contrast to ‘solar epact’, téntyon). Thus, A. is a number serving along with téntyon and mätgé to support the calendar calculations. The number of days in the lunar year amounts to 354 (12 months each of 29 and a half days), instead of the 365 days of the solar year. This difference is of fundamental importance for calculating the festivals of the lunar year.⁷²

Abäqte wäräh ‘lunar epact’ is full day’s dark time. Getačäw Hayäle emphasized the meaning of day in Ethiopian context. To him day (Qänə ቀን) is the 12 hours of the light period and ‘Elätə (ዕለት) is the whole 24 hours of the full day.

ዕለት የምንለው ቀንና ሌሊቱን(24ቱን ሰዓት ነው) ቀን የምለው ግን ቀኑን (ብርሃን ያለበትን ጊዜ)ብቻ ነው። ፡ ቀኑን በግዕዝ መዓልት ይሉታል። ወዓለ ዋለ ከሚለው ግስ የተወሰደ ቃል ነው።⁷³ We call ‘Elätə the whole periods of light and night hours. While Qänə ቀን is only the light time of the day. Qänə ቀን is the Ge’ez which tmeans Mə‘alət , drieved from the Ge’ez word wä‘alä, which means to abode.

Unlike the European system, Ethiopians reckon all days and nights equally and sharing 12 hours annually, despite all calendar scholars claim unequal characters on the length numbers hours in each month. The following table shows the ratio of light and dark hours distribution through a period of a year.

⁷¹ ግርማ አውግቸው ደመቀ,(2016 እ.አወ.አቆ),) “ዘመን አቆጣጠር፣ የቀናትና የወራት ስያሜ” ፣ገጽ 1

⁷² Conte, D (2007). Calendar, page 7 www.astronomy. Org.gg. May 2016, Uhlig, S (2003).ENCYCLOPAEDIA AETHIOPICA. Volume I page 6.,

⁷³ ግርማ አውግቸው,(2016 እ.አአቆጣ) “ዘመን አቆጣጠር፣ የቀናትና የወራት ስያሜ” ፣ገጽ 11

Table 2: Length of light in a montht.

No	Months	Length of light	Length of darkness
1	<i>Mäskäräm</i> Sep/Oct	12 hours	12 hours Autumnal Equinox
2	<i>Ṭəqəmt</i> Oct/Nov.	11 hours	13 hours
3	<i>Hədar</i> Nov/Dec	10 hours	14 hours
4	<i>Təḥśās</i> , Dec/Jan	9 hours	15 hours
5	<i>Ṭərrə</i> Jan/Feb	10 hours	14 hours
6	<i>Yäkatit</i> , Feb/Mar	11 hours	13 hours
7	<i>Mägabit</i> Mar/Apr	12 hours	12 hours Spring Equinox
8	<i>Miyazya</i> Apr/May	13 hours	11 hours
9	<i>Gənbət</i> May/Jun	14 hours	10 hours
10	<i>Säne</i> Jun/July	15 hours	9 hours
11	<i>Ḥamle</i> Jul/Aug	14 hours	10 hours
12	<i>Nähase Paḡwəmen</i> Aug/Sep	13 hours	11 hours

Table source: Getačäw Hayəle

The Ethiopic Enoch describes the variation in the length of daylight in the year by preceding ways:-

And the Sun returns, and comes to the second Gate in the east, and it returns along those divisions of its journey for thirty mornings, rising and setting. And on that day the night becomes shorter in length and the night amounts to ten parts and the day to eight parts. And on that day, the Sun rises from the second Gate, and sets in the west, and returns to the east, and rises in the third Gate for thirty one mornings, and sets in the west of the sky. And on that day the night becomes shorter, and amounts to nine parts, and the day amounts to nine parts, and the night becomes equal with the day.⁷⁴

⁷⁴ Henoch 72:29 A Modern English Translation of the Ethiopian Book of Enoch, www.ma.huji.ac.il/.../ March 2016

Ancient Ethiopians were dependents on counting the length of their shadow using their feet to reckon the hours of the day as well as, the arrangements of the stars and moon in the sky to identify hours in the night. This difficult classification of time which was mainly depend on the Sun, moon & stars, currently replaced by timepiece in the whole areas of the country. Whereas, monasteries in Northern part of the country are still depend on using the former method. Daga 'əstefanos (an island in Lake ṭana), *Mahibärä šəlasse* (monastery in the border of Sudan) are among the monasteries which use the former way. According to Unpublished book of Abba wälädä Mādəḥən, Monk and church calendar scholar in *Kəbərən Gäbər'el* Monastery, the length of the light of the moon increases 48 minutes (four *Kekərosə*) from the first day to 15th day, and decreases 48 minutes (four *Kekərosə*) per day after 15 day. For instance, to reckon the 2nd day of the moon $48 \times 2 = 96$. $96/30 = 1$ hour and 36. According to this result, the 2nd day of the moon means moon's light in the sky is only 1 hour and 36 mints.

The ancient hour allotting system of Ethiopians, as indicated in the past is still used in the few monasteries. The system is lean on the shadow of the person. Calculating the length of own shadow using feet. It is clear the length of the shadow varies from Moring, mid-day and evening correspondingly. The length of the day is not equal in all months, because of earth's rotation around the sun. This is why the number of the feet is unequal annually.

Table 3: Ancient timepiece in Ethiopia⁷⁵

Day- division	O'clock	Sep./Mar <i>Mäskäräm</i> <i>Mägabit</i>	Oct/Feb <i>Ṭəqəmt</i> <i>Yäkatit</i>	Nov/Jan <i>Ḥədar</i> <i>Ṭərri</i>	Dec. <i>Taḥśas'</i>	Apr./Aug <i>Miyazya</i> <i>Nähase</i>	May/July <i>Gənbət</i> <i>Ḥamle</i>	June <i>Säne</i>
Daybreak ' Abeyə Nägəh	1	24	26	27	29	23	21	20
Moring Nägəh	2	14	16	17	19	13	11	10
Great first quarter ' Abeyə šäläsət	3	10	12	13	15	9	7	6
Small first quarter Nə'usə šäläsət	4	7	9	10	12	6	4	3
Great mid day ' Abeyə Qätər	5	5	7	8	10	4	2	1
Mid day Qätər	6	4	6	7	9	3	1	0
Great third quarter ' Abeyə Sä'at	7	5	7	8	10	4	2	1
Small third quarter Nə'usə Sä'at	8	7	9	10	12	6	4	3
Great 4 th quarter ' Abeyə Särək	9	10	12	13	15	9	7	6
Mid 4 th quarter Məsətə Särək	10	14	16	17	19	13	11	10
4 th quarter Särək	11	24	26	27	29	23	21	20
Sunset/Evening Məsətə	12	70	70	70	70	70	70	70

Table Source: Yared Fanəta

⁷⁵ ያሬድ ፊናታ, (2004). “ባሕረ ሃሳብ” ገጽ 200

Moon from its raising day to the fifteenth day increases its light time 48 mints daily. However, from 15th day its light times decrease daily 48 mints. According, to this calculation, the 2nd day of moon is $48 \times 2 = 96$. That is equivalent to an hour and 36 mints. In the second day moon's light period in 1 hour and 36 mints⁷⁶

According to the explanation above, we can comprehend that ancient Ethiopians used moon's light to surmise the hour in the night, in relation to the rising (appearing) of the moon in the dark night.

The Holy Bible described Jesus Christ's miraculous walking on the surface the water and the time of the miracle in the Sea of Galilee. The synoptic Gospels Matthew and Mark put the miracle and the hour of the night in preceding way.

Now in the fourth watch of the night Jesus went to them, walking on the sea. Matt 14:25

The Jew allotting twelve hours of the night in to four parts. There are four watches in the night. Every watch consists three hours. According to the this the hours of Jesus's mirackle was after fours A.M(Ethiopic 10 hour)

Then He saw them straining at rowing, for the wind was against them. Now about the fourth watch of the night He came to them, walking on the sea, and would have passed them by. Mark 6: 48

The above quotes of the Bible can be a sign of full observe on how was the way of reckoning the hours of the nighttime in ancient Jew society.

4.3.2 MONTH Wārəh (ወር/ወርኅ)

Gerəma 'Awəgəčew, wrote about the derivation of month Wäre (ወር/ወርኅ) as it is consequent from the name of the moon. According to his confirmation, in the most Semitic languages, the name for month instigated from common core of the name of the moon.

ወር የሚለው የአማርኛ ቃል በራሱ ጥንታዊ ምንጩ ጨረቃ ማለት ነው። ይህ ቃል በሁሉም ሴሚቲክ ቋንቋዎች ማለት ይቻላል በዚህ ፍቺው ይገኛል። ለምሳሌ፣ ከነዚህ ቋንቋዎች ቀደምቱ በፊር ሰፍሮ በሚገኘው በአካዲያን ወረኅ ሲሆን በጥንታዊ ደቡብ አረቢያን ቋንቋዎች ደግሞ ወረሐ ነው።⁷⁷ The source for the Amharic word Wārəh was from moon. This word almost in all Semitic languages remains in this meaning. For Example early recorded written source of Ancient languages of Akkadians word for month is Wārəh and and in Arabic Wārāha.

⁷⁶ አባወልደ መድኅን መጽሐፈ ባህረ ሃሳብ, ያልታተመ።

⁷⁷ ግርማ አውግቶው (2016 እ.አ.አ), "ዘመን አቆጣጠር፣ የቀናትና የወራት ስያሜ" ገጽ 1

Getačäw Hayäle, on his search about the Etymology of months in Ethiopian calendar designated that monthly women's menstruation cycles and the revolving of moon around earth was the root in calibrating the length of days in a month:

የድሮ ሰዎች ዕለቱን 24 ካደረጉ በኋላ ሌላ የተወሰነ ጊዜ ጠብቆ የሚመላለስ ነገር ክስተት እንዳለ ሲፈልጉ ጨረቃንና የሴቶችን ወራት(የወር አበባ)አገኙ።ጨረቃ በሰማይ ላይ አንድ ጊዜ 29 ዕለት አንድ ጊዜ 30 ዕለት በተለያየ መጠኗ ትታይና በየ29/30 ዕለት ግን አንድ ዕለት በሙሉ መጠኗ ትታያለች።በዚያን ጊዜ ጨረቃ ተወለደች እንላለን። ወር ማለት ጨረቃ ማለት ነው።⁷⁸ After allotting a day to twenty four hours, ancient people searched any phenomenon that circulated in a period. Then they founded the menstruation period. Moon in the sky appears 29 and 30 days in a different vision. However, once in 29/30 days the full moon appears. We call this full moon day the birth of the Moon. Wāräh menas moon

Ethiopians are the founders to the names of their months. Many scholars accept this idea at the current time.Ephrem Isack is along with them. To him there is no correspondence on the name of the months between the Ethiopian and the rest ancient calendars months.

ምንም እንኳ የኢትዮጵያ አቆጣጠር ከግብፅ የመጣ ቢሆንም፣ የግዕዙም ሆነ የየትኛውም የሀገራችን ቋንቋዎች የወራት ስሞች ከግብፅ የወራት ስሞችም ሆነ (ምናልባት ካንድ ሁለት በስተቀር) ከባቢሎንያን እና ከአብራይስጥ የወራት ስሞች ጋር ግንኙነት የላቸውም።⁷⁹ Though the Ethiopian calendar was drieved from Coptic, Neither Ge'ez nor other Ethiopian languages of monthes have the same meaning with the copts.(Except one or two months)there is no similar name of the Ethiopian months with Babylonian and Hebrew months.

Always 30 days of solar and 29/30 of lunar, days are the components of a month in Ethiopian Calendar. Fritsch also point up the Ethiopian months:

The year is divided into twelve months or moons (warh) of thirty days. This totals 360 days, complemented by a group of five (six during the leap-year of Luke) supplementary days bringing the total to 365 (366 in a leap year) days. This group of five or six days is the well-known "thirteenth month of sunshine" of the tourist advertisements. It is called Pagwemen, from the Greek Epagomenai hēmerai, i.e. 'supplementary days'.⁸⁰

Easton, in Bible dictionary, emphasized the Egyptian claims, as they were the founders of Months even before Exodus as illustrated below:

⁷⁸ ጌታቸው ሃይሌ (2006) “ባሕረ ሃሳብ” 2ኛ እትም፣ ገጽ 34.

⁷⁹ Cited by Geräma 'Awägäčew (2016) “Reckoning of Era, Naming days and weeks.” Page xxi

⁸⁰ Fritsch, E (1999). “The liturgical year and the lectionary of the Ethiopian church”, Page 72. Pwtw.pl/wp-content/.../wst/

Among the Egyptians the month of thirty days each was in use long before the time of the Exodus, and formed the basis of their calculations. From the time of the institution of the Mosaic Law, the month among the Jews was lunar. The cycle of religious feasts depended on the moon. The commencement of a month was determined by the observation of the new moon. The number of months in the year was usually twelve (1 Kings 4:7; 1 Chronicles 27:1-15); The latter had twelve months of thirty days and five epagomenac or odd days.⁸¹

Accordingly, 'Abərəham tənaw argues that the practice of allotting 30 days to each month was began during the epic great flood period. He supports this say that as system allotting equal days for each month of Ethiopians were started from the time of the great flood. He supported his belief by quoting the Holy Bible of Gen. 8:3

And the waters receded continually from the earth. At the end of the hundred and fifty days, the waters decreased.

To 'Abərəham tənaw, 150 were 5 months, which equally shared 30 days each.⁸²

The variations and similarities of months between major types of calendars, the Ethiopian, Coptic, Julian, and Gregorian calendars can show how the categories of Months in each calendar mainly related conceptually in their origin. The practice of allotting 30 days for each months in Coptic and Ethiopian calendars is identical including five days of small month(*Pagwəmen*) a leap year.

The name and the meaning of months are completely different in the Ethiopian and Coptic calendars. *Gerəma 'Awəgəčew*, indication on the formation of months of Coptic and Ethiopian calendars make known as an adjustment was taken on months that the society used before. The variation on the name of Coptic and Ethiopic months, prove about the adjustment of months.⁸³

⁸¹ Easton, M. G. (1996). "A Dictionary of Bible Terms", Third Edition. Page 1016.

⁸² አብርሃም ጤናው, (2000) አቡሻክር የቤተክርስቲያን ሒሳብ ገጽ 68.

⁸³ ግርማ አውግቶው (2016 እ.አ.አቆ), "ዘመን አቆጣጠር፣የቀናትና የወራት ስያሜ" ፣ገጽ1 .

Table 4 Cotic Julian and Gregorian months in Ethiopian first day of the month

No	Ethiopian			Coptic			Julian			Gregorian		
	month	day	leap	Month	day	leap	month	day	leap	month	day	leap
1	<i>Mäskäräm</i>	30		Tut	30		Aug.	Aug. 29	Aug. 30	Sept.	Sept. 11	Sept. 12
2	<i>Ṭəqəmt</i>	30		Babah	30		Sep.	Sep. 28	Sep. 29	Oct.	Oct. 11	Oct. 12
3	<i>Ḥədar</i>	30		Hatur	30		Oct.	Oct. 28	Oct. 29	Nov.	Nov. 10	Nov. 11
4	<i>Tahśās</i>	30		Kiahk	30		Nov.	Nov. 27	Nov. 28	Dec.	Dec. 10	Dec. 11
5	<i>Ṭərri</i>	30		Toubah	30		Dec	Dec 27	Dec 28	Jan.	Jan. 9	Jan. 10
6	<i>Yəkātīt</i>	30		Amshir	30		Jan.	Jan. 26	Jan. 27	Feb	Feb. 8	Feb. 9
7	<i>Mägabit</i>	30		Baramhat	30		Feb.	Feb. 25	Feb. 26	Mar.	Mar. 10	Mar. 11
8	<i>Miyazya</i>	30		Baramudah	30		Mar.	Mar. 27	Mar. 28	Apr.	Apr. 9	Apr. 10
9	<i>Gənbət</i>	30		Bashans	30		Apr.	Apr. 26	Apr. 27	May.	May. 9	May. 10
10	<i>Säne</i>	30		Baounah	30		May	May 26	May 27	Jun.	Jun. 8	Jun. 9
11	<i>Ḥamle</i>	30		Abib	30		Jun.	Jun. 25	Jun. 26	Jul.	July. 8	July. 9
12	<i>Nähase</i>	30		Misrah	30		Jul.	Jul. 25	Jul. 26	Aug.	Aug. 7	Aug. 8
13	Pagwemen	5	6	Nissieh	5	6	Aug.	Aug. 24	Aug. 25	Sep.	Sep. 8	Sep. 9

Table source: Emmanuel Frisch and Tawodros Malaty

The first day of each month in Ethiopian calendar in association with the Coptic, Julian, and Gregorian calendars denoted in the table above.

4.3.3. Seasons (ወቅቶች)

Ethiopians are the founders of their own seasons in relation to their own environment. Seasons are un-identical in the Ethiopian and Coptic calendars. In Ethiopia, there are four seasons, i.e. Spring ṣādäyə (ጸደይ) Summer kərämət (ክረምት), Autumn መጸው Mäṣäwə & Winter bäga (በጋ). Unlike the European seasons, in Ethiopia the Summer period denotes the rainy season, and the winter

to sunny season. However, in Egyptians (Copts) there are only three seasons. I.e. Flooding, planting, & harvesting. 84

The Coptic (and old Egyptian) year is divided into three main seasons, each season has four months: the first season is the season of the flood of the Nile, which wraps (Tute, Babah, Hatour and Kiahk) September, October, November and December. The second season is the season of vegetation, which covers four month of the Copts. (Touba, Amshir, Baramhat and Baramouda) January, February, March, and April. The third one is the season of reaping and harvesting which covers the Coptic months of (Bashans, Baounah, Abib and Misra) May, June July and August. The Ethiopian rainy season is the flooding seasons of Egyptians because there is no rainy season in Egypt. Instead, they depended on the flooding of River Nile during the rainy season of Ethiopia. The Ethiopian church Calendar scholars, in the explanation of the Ethiopian seasons, used the Hebrew seasons to put side by side with their own. To them the Hebrew seasons are just reverse to the Ethiopian's one. Yared Fanəta wrote as there months, *Ḥamle*, *Nähase* and *Mäskäräm* are winter in Ethiopia and summer in Hebrew.⁸⁵

In process of dividing the seasons in to four categories, church scholars used to connect seasons with different weather conditions of the year and astronomy. In addition to the weather condition, they maintain as annual weather conditions are the result of four major stars, which followed by three minor stars. There are clergies that used the movement of these stars to identify the person's upcoming life. Ordinary people distinguish them as fallacy delivers and watch crafters in relation with stars, (Däbätära, kokebä qotari, 'Awädänägäšt gäläčə.) This practice is absolutely condemned in the church. The Ethiopian Orthodox church book, *Hayəmanotə 'Abəw*, (ሃይማኖት አበው), commanded the believers to stay away from zodiac.⁸⁶

84 Wiscopts.net/spiritual-library/...copt/70 "The Coptic Calendar" March 2016

⁸⁵ ያሬድ ፈንታ, (2004). ባሕረ ሃሳብ፣ገጽ 166)

⁸⁶ ሃይማኖት አበው (፲፱ ፻፹፮ ዓ/ም) ክፍል ፲፫፣ ምዕራፍ ፻፳፭፣ገጽ ፭፻፺፪

Hayəmanotə 'Abəw, (ሃይማኖተ አበው), prohibited prediction of the future from the voice birds. Guidance on any magical signs, sprinkling, and zodiac are also forbidden to prevent the flocks of the Church from watch crafts. If the Church prohibits her believers, how this practice continued? It will explain in the coming chapters.

Table 5: Ethiopic and Hebrew Seasons with stars⁸⁷

No	Name of the star	Season				Months	days	Accompanier stars
		Ethiopic		Hebrew				
1	Hələmälek	ከረምት kəramət	Water	bāgaḥ:ገ	fire	July Oug. & Sep.	91	šarətan 'Asədə Sənəbolah
2	Mələ'el	Mäšäwə መጻው	wind	šädäyə ጸደይ፣	earth	Oct. Nov. & Dec.	91	Mezan 'Aqərab Qäwəs
3	Mələkəl	bāgaḥ:ገ	earth	kəramət ከረምት	wind	Jan. Feb.& March	91	Täwər Jäwəza Haməl
4	Nar'əl	šädäyə ጸደይ፣	fire	Mäšäwə መጻው	Water	April, May and June	91	Jäde Dälawe Hutə

Table Source: 'Abərəham ṭenaw

According to calendar sources, there are four major stars, which share four seasons in the year. There are also 12 minor stars, which appeared in 12 months of the year.⁸⁸

The above explanation of the clergies will lead us to be aware of that the Middle East Israel and the nearest country Ethiopia own a completely non-similar weather conditions and the Ethiopian calendar scholars comparing the Ethiopian seasons with Israel rather than Egyptians who share numerous reckoning styles.

4.3.4 'Awədä 'Amät (ዓውደ ዓመት) Year cycle

Solar Year in Ethiopian calendar is the rotation of the Earth around the sun. Indeed, it is the same in all calendars except those who follow lunar calendar. The lunar calendar is mainly depending on the rotation of the moon around the sun. The Ethiopic Enoch explains this fact below:

⁸⁷ አብርሃም ጤናው, (2000 ዓ/ም)አቡሻኸር የቤተክርስቲያን ሒሳብ, ገጽ 203,ያሬድ ፈንታ,(2004). “ ባሕረ ሃሳብ” ገጽ 200.

⁸⁸ መሠረት ስብሐት ለአብ (1981) “ትውፊታዊ ሃሳብ ዘመንና ታሪኩ” ገጽ 186.

And the year amounts to exactly 364 days. In addition, the length of the day and the night, and the shortness of the day and the night - they are different because of the journey of the Sun. Because of it, its journey becomes daily longer, and nightly shorter. And this is the law and the journey of the Sun and its return, as often as it returns; sixty times it returns and rises, that is the great eternal light, which forever and ever is named the Sun.⁸⁹

To the Ethiopic Enoch, the whole days in the year are 364 days. The Ethiopian calendar scholars also accept this. In the Ethiopian calendar, the 365th day is known as ‘Elätə Mərəya.⁹⁰

This day is the tool that operates the days of the year to avoid staying at the same days annually. For instance September 11/12 of the Ethiopian new years will celebrated in similar day Monday, Tuesday,... every year unless the 365th day was available. Abba wälädä Mādəhən, situated this as if we allot the whole day to seven it become 364. The 356th day is called guider of the days. That means day that used to circulate the whole days to destine to the same day. For example if days in the year were 364, then the New Year days will fate in same day permanently. in the year⁹¹

There are foreign scholars who claim the Ethiopian solar years and the way it reckoned. Fritsch is among them. He set his explanation in this way:

The year includes 365 days; every four years, one supplementary day is added at the very end of the year. Groups of four inside of which each year, called zaman, i.e, count the years. "Time", or "era", or even "year" in this context, receives the name of an evangelist. The Year of Matthew (Zamana Matewos) is first within this series, followed by that of Mark (Zamana Marqos). Then comes the year of Luke (Zamana Luqas) or leap-year, at the end of which the supplementary day is attached. The year of John (Zamana Yoannes) ends the four-year cycle.⁹²

The total number of solar year in Ethiopian and Coptic calendars is 365 1/4 days and 354 of lunar days. In fact, the fractional min.(Kəkərosə. Kale‘et) are also the body of these days. These fractions could produce full day in 600 years to increase days of the shortest month from 6 to 7 during leap year. The Ethiopian calendar writer tried to explain about in the following manner:

⁸⁹Cracken, A, (2015)Henok 72:29 “A Modern English Translation of the Ethiopian Book of Enoch”
<https://tiliculca.wordpress.com/.../free>. Jan 2016

⁹⁰.መሠረት ስብሐት ለአብ (1981) ትውፊታዊ ሃሳብ ዘመንና ታሪኩ ገጽ 186.

⁹¹ አባ ወልደ መድኅን “መጽሐፈ ባሕረ ሃሳብ, ያልታተመ”.

⁹² Fritsch, E (1999). “The liturgical year and the lectionary of the Ethiopian church” Page 72
Pwtw.pl/wp-content/.../wst/

አንዱን ዓመት በፀሐይ ቢቆጥሩት 365 ዕለት 15 ኬክሮስ 6 ካልዲት ይሆናል። 6 ካልዲትን እስከ60 ዓመት ቢወስዱት | ኬክሮስ ይሆናል። እስከ 600 ዓመት ቢወስዱት አንድ ዕለት ይሆናል። በዚያን ጊዜ ጲግሜን ስድስት መሆኗ ቀርቶ ሰባት ትሆናለች።⁹³ if counted the year in dāḥayə(Solar calendar) , it becomes 365 days, 15 Kekərosə and 6 Kale‘et. This 6 extra 6 Kale‘et become one full extra day in 600 years. during this occasion the 13th month of Paḡwəmen will extended from 6 to 7 days.

In Ethiopian church tradition, years are named in line with the four evangelists. The first year’s name to Matthew, the second Mark, the third Luke and the fourth to John. The shortest 13th Month of Luke is a leap year, adding one day to make it six days. In the case of leap year, the next new year of Ethiopia will celebrated in 12 of September. Calendar intellectuals supposed as it is the time in which the shortest month day can accomplish seven. However, it is imaginary, or theoretical not practical.⁹⁴

The above days, weeks, seasons, and year are calculated via days, as each appearance of days in the cycle of year are the constructors.

4.3.5 ’Awədä Cycles Era

Cycles(’Azəman) are the products of years. Though there are many types of eras in the calendar, we will focus on the most essential and highly used types of eras in Ethiopian calendar. These are Lunar Cycle/ the 19 year cycle (’Awədä ’Abäqte) , Solar Cycle(’Awədä dāḥayə) Cycle of seal (’Awədä Mahetem) and Great Lunar cycle (’Awədä Qämär)

4.3.6’Awədä ’Abäqte (epact):-

It represents 19 years. According to the Ethiopian calendar, the sun and moon always started their way on *Mäskäräm* 1st (September 11/12) on exact same path. Then, they never meet until 19th year. This is due to sun and moon finished their annual path in unequal days, as it takes 365 days to the Earth and 354 to moon fulfill annual rotation. Encyclopedia Aethiopia accentuate it here:

In the cycle of 19 lunar years (ዓውደ-አበቅቴ፡፡awdä abäqte), seven lunar months each of 30 days were added to the lunar calendar to keep it within the framework of the solar one. The difference between the solar year and the lunar year can be marked by the Abaqte-number.⁹⁵

’Awədä ’Abäqte consists ’Abäqte and. Mätəqə. Mätəqə mainly used to identify the solar calendar i.e. the day of the New Year and others days. However, ’Abäqte lend a hand to identify the lunar day, (Lelət).

⁹³ አባ ወልደ መድኅን “መጽሐፈ ባህረ ሃሳብ, ያልታተመ”
⁹⁴ መሠረት ስብሐት ለአብ (1981) ትውፊታዊ ሃሳብ ዘመንና ታሪኩ 186.

⁹⁵ Uhlig, S (2003). ENCYCLOPAEDIA AETHIOPICA, volume I page 6

4.3.7 Mätəqə (Shofar)

It is the Jew origin and used to celebrate the Jew Feasts and reckon fasting days. It always demarked on the 6th months of the Jew. I.e. September/October. The first month of Jew is April(Nessan) but their New Year fall under in the sixtieth /seventh month. As Jew London museum put it:

The Jewish calendar is based on the moon and is 354 days long. The first month of the Jew calendar is called Nessan (April) The Jewish New Year, however is in Tishrei (which is the seventh month).⁹⁶

11 days for Abaqte and 19 days for Matqe can bring into being to reach both solar and lunar calendars, as the encyclopedia Aethiopia. ⁹⁷

Kədanewäləd Kəfəle demonstrated the literal name of Mätəqə (መጥቅዕ). According to him, the word Mätəqə (መጥቅዕ) is the feast day of Hebrews New Year, also the Seventh Month, from their Passover year, in which the lunar day is instigates.

መጥቅዕ፡የበዓል ስም ፣የዕብራይስጥን ዓውደ ዓመት፣፡፡፡፡ መለከት፡ የሚነፋበት፡፡ በሰባተኛው ወር ጨረቃ በምትበቅልበት(በምትወጣበት) የሚውል⁹⁸ Mätəqə the name of feast and Hebrew New Year in which the shofar is announced. It usually destined on the Seventh month of the first day of the moon.

Accordingly, Mätəqə (መጥቅዕ) gives the date in the Ethiopian civil calendar to the Jewish New Year’s day. The Etymology of Mätəqə (መጥቅዕ) is similar to the Jewish *Shofar*, a horn or Trumpet- like instrument.

Jewish associated Shofar with their feast days Rosh-Hashanah/ The New Year/ (Lev 23: 24, Num. 29: 9) and Yom Kippur/day of atonements,(Lev 25: 9). On these days, all the Hebrew communities directed to sound the Shofar all the way through their lands.⁹⁹

⁹⁶ www.jewishmuseum.org.uk/.../ The Jewish Calendar .April 2016

⁹⁷ Uhlig, S(2003). “ENCYCLOPAEDIA AETHIOPICA, volume III page 868

⁹⁸ ኪዳነ-ወልድ፡ ክፍሌ፡፡(፲፱፻፵፰ ዓ/ም) “መጽሐፈ ስዋስው ወግስ፡ወመዘገበ ቃላት ሀዲስ” ገጽ ፭፻፱

⁹⁹ www.hebrew4christians.com Shofar blessing April 2016

Table 6: Years Epact Cycle¹⁰⁰

No	Year of the 19-year Epact(lunar-) cycle	Epact's calculation (minus-days of the lunar year)	Epact in the sources
1	Year 1	0	0
2	Year 2	$0+11= 11$	11
3	Year 3	$11+11= 22$	22
4	Year 4	$22+11=33-30= 3$	3
5	Year 5	$3+11= 14$	14
6	Year 6	$14+11= 25$	25
7	Year 7	$25+11=36-30= 6$	6
8	Year 8	$6+11= 17$	17
9	Year 9	$17+11= 28$	28
10	Year 10	$28+11=39-30= 9$	9
1	Year 11	$9+11= 20$	20
12	Year 12	$20+11=31-30= 1$	1
13	Year 13	$1+11= 12$	12
14	Year 14	$23+11=34-30= 4$	4
15	Year 15	$4+11= 15$	15
16	Year 16	$15+11= 26$	26
17	Year 17	$26+11=37-30= 7$	7
18	Year 18	$7+11= 18$	18
19	Year 19 since there no 19 it is 0	$18+11=29 * 0$	29 that means o Epact

Table source: ENCYCLOPEDIA AETHIOPICA

¹⁰⁰ Uhlig,S (2003). ENCYCLOPAEDIA AETHIOPICA, volume I page 6

The beginning of Christian era, according to Catholic Church was related to the day of incarnation. In the 6th century B.C, Dionysius Exiguus at Rome declared to began calculating from 25 Mar 1st A.D.¹⁰¹ Here the Catholic Church used the day of incarnation as the beginning of calculation and the times from creation to the incarnation are abandoned. Whereas, in the Ethiopian Orthodox Church, the Christian era what it called “Year of Mercy, (‘Amätä Məhərät) had began from the day of Christ’s birth, I.e. January 7/6. We use Years from the time of Adam and Eve to the birth of Christ. According to the Ethiopian Orthodox Church, these years are 5500. This is the core to identify and destine to the present and future solar years. Most calendar scholars agreed in this 5500, as shown in the table below.

Table 7: Years Before Christ, according to Calendar scholars.

Events	Wälädä Mänäkos	Säyedə Wälädä Bätəreqə	Mahəbug Mäbänəgawə	John Chrysostom	Geyorəges Wälädä ‘Amedə	Kədanewäləd Kəfəle	Mäśśärət Səbəhätäl’äb
From Adam to the flood	2256	2256	2256	2256	2256	2256	2256
To Abraham’s 75 years	3430	3428	3442	2423	3388		3463
To exodus	3842	3845	3846	3828	3755		3893
To the era of judges						4406	
To the death of Solomon	4511	4521	4501	4547		4471	4526/6mon
To 10 tribes exile	4773						4787/6mon
To Babylonian exile	4905	4918	4917	4952	4917	4917	4921
To the death of Belshazzar	4974	4970	4943				4991
To the collapse of Persian dynasty	4181	5181	5187		5181		5183
To the birth of Christ	5501	5500	5507		5500	5500	5501

Table Source: Mäśśärət Səbəhätäl’äb¹⁰²

¹⁰¹ Cross, F. L and Livingstone, E.A (1988) “The Oxford Dictionary of Christian church” 6th edition. Page 220

¹⁰² መሠረት ስብሐት ለአብ (1981) “ትውልዳዊ ሃሳብ ዘመንና ታሪክ” ገጽ 134.

Calendar scholars in the table fixed, years from Adam to Christ from 5500-5507. Mahibub Mebengawe's 5507 year is near to the Gregorian computation. However, it is impossible to reckon the correct Ethiopic calendar without handling 5500

4.3.8 'Awədä dāḥayə (solar cycle)

'Awədä dāḥayə is the calendaric term that represent, the transmission of 28 years, in which 'Awədä'Abäqte (Epact) and 'Amät Wänəgəlaw (the year of evangelist) congregate together. According to the Ethiopian calendar tradition, the first year of 'Awədä dāḥayə, is the year of evangelist Matthew (Zāmānā Matewos) and the day is always Wednesday. To the Ethiopian calendar scholars, the first calendar year was given to Matthew and Sun is created on the fourth day (Wednesday) as indicated in Geneses 1:14. This will happen once in 28 years and this is known as 'Awədä dāḥayə. It used to reckon the first day of September (New Year) and the day of the Mätəqə in which all feasts in addition, fasting is based on it .

As indicated above, 'Awədä dāḥayə (solar cycle) is 28 years, 4 x 7 years. This cycle repeats the sequence of the evangelical, as well as the weekday of the first day in the year. The Encyclopedia Aethiopia conveys it in the next phrase:

All calendaric data can be found as soon as three fundamental parameters are known: the mätqé with its 19-year period of lunar phases (awdä abäqte), the téntyon and the "Evangelist" with the period of 4 years (awdä amät) for the "Julian" intercalation pattern of the Alexandrian civil calendar. A.S. is a 28-year cycle, which results if one combines the seven-day week with the four-year awdä amät cycle: only after $7 \times 4 = 28$ years will an Alexandrian year begin with the same weekday.¹⁰³

4.3.9 'Awədä Mahetem (Cycle of Seal)

'Awədä Mahetem is the cycle, which consists 76 years. It is the destination of Epact (The first zero epact), and the year that entitled to the evangelist John, and the day (Monday). Only once in 76 years these three calendaric events distained in the same occasion. as illustrated by In the Encyclopedia Aethiopia .

"The combination of awdä amät and awdä abäqte results in the awdä mahtäm cycle, which thus amounts to $4 \times 19 = 76$ years. Seven seals (maötäm) make again one lunar cycle."¹⁰⁴

4.3.10 'Awədä Qämär (Great lunar cycle)

'Awədä Qämär is the 532-years cycle, which underlies the whole calendar system, is the

¹⁰³ Uhlig, S (2003). ENCYCLOPAEDIA AETHIOPICA, volume I page 403

¹⁰⁴ Ibid

consequence of combining the seven-day week with the 76-year-cycle.¹⁰⁵

The above elements of calendar are essentials to search about the Ethiopian calendar, to reckon the feasts and fasting days, to identify New Year and other related matters.

4.4 How to calculate The Jews and Ethiopic New Year, and Movable Feasts?

As tried to trace previously, the Coptic and Ethiopic traditions years from the creation of Adam and Eve to the birth of Christ or BC is only 5550 years. *Gerəma* 'Awəgəčew set about the numbers of years in the BC according to different calendars. To him the total years of BC in the Gregorian calendar is 5493 years, Hebrew's BC covers 3761 years. John McGowan hold above 13000 years to BC (2005), to Crawford (1887) years from Adam to Abraham are 15000.¹⁰⁶

We should used 5500 years to reach to the correct result of reckoning of the above calendaric elements, as demonstrated in the *Mässärət Səbəhätäl'äb's* table above.

The above table can leads us to conclude the whole years from the Adam and Eve to the birth of Christ were 5500, and to find all years from that to the present time we should add 2008 A.D. $5500 + 2008 = 7508$. This means according to the church tradition, 7508 years are the entire years from the creation of human to the present time.

To identify leap year, it needs allotting the whole years 7508 to 4. $7508 \div 4 = 1877$. Here the result is zero. If the final extra number reached zero or four, then the year will leap year named by John the evangelist. If the remain number is One, it represents Matthew, two Mark three Luke respectively. According to this computation, the Ethiopian 2008 (2015/16) year is leap year, and Era of John the evangelist. (*Zämänä Yoḥannəs*)

To reckon the New Year of 2008, we allot 1877 by 7 until we reach number, which is fewer than seven. For example: the remain number after allotting 100 is six. From $800 = 2$, from $77 = 0$ and the last number is $6 + 2 = 8 - 7 = 1$. We put in hand this remain number 1 and multiply it by $5.1 \times 5 = 5$.

If the end result is one, it represent Wednesday first day of September and New Year. Two Thursday, Three Friday, Four, Saturday, Five Sunday, Six Monday and Zero or Seven Tuesday, respectively. According to the tradition, always one should drop from the result. In 2008 EC, Five is the final result $5 - 1 = 4$. This means Saturday. We celebrated the Ethiopian New Year 2008 on *Mäskäräm* 1, i.e. September 12 on Saturday. If we reckon the day of the New Year, it is

¹⁰⁵ *Ibid*

¹⁰⁶ ግርማ አውግቶው (2016 እ.አ.አቆ), “ዘመን አቆጣጠር፡ የቀናትና የወራት ስያሜ” ገጽ 41

Uncomplicated to find the linger days of the year.¹⁰⁷

The name for this reckoning way is known as *tənətyon*. The final intended number is called 'Abäqte *ḍāḥayə*. For instance, the number of 'Abäqte *ḍāḥayə* in 2008 is four, and that means Saturday. One represents Wednesday, Two Thursday, and three Friday. The *tənətyon* is important to arrive at *Abaqite* and *matqe* as Aethiopic encyclopedia elaborated it.¹⁰⁸

tənətyon is also used as astrology and numerology (Magic) as the same time, multiples of 7 play a role that indicates a connection with the days of the week.¹⁰⁹ Not only *tənyon*, but also the Alphabet is also used to numerology having its own number. Will epitomize in the next step.

'Abäqte and *Mätəqə* are the solar lunar years. 'Abäqte means the difference between solar and lunar years. *Mätəqə* literally derived from the Ge'ez word *bell*, which means collector. The traditional books of calendar gave the name collector to *Mätəqə* due to the reckoning of all mobile feasts and fasts are entirely depended on it. Its origin is from the Jew calendar.¹¹⁰

'Abäqte and *Mätəqə* are the foundation of the whole computes as illustrated in the reference thirty-six.

As a rule, 11 and 19 are numbers correspondent to 'Abäqte and *Mätəqə* that help to bring feasts and fasts in the year. As stated earlier, 'Awədä 'Abäqte is the rotation of 19 years. To know what is the number of 'Abäqte and *Mätəqə* it needs accession of 19 day to *Mätəqə* and 11 days to 'Abäqte taking place respectively.

For instance, to identify the 'Abäqte and *Mätəqə* of the 2008, Total years = $7508 \div 19 = 395$. Only 3 years are left behind. From 3 years, we subtract 1 = 2. This 2 is known as *Wänəbär*, (Bench). To 'Abäqte $11 \times 2 = 22$. To *Mätəqə* $19 \times 2 = 38$, subtract 30 = 8. Therefore, 'Abäqte in 2008 EC is 22 and *Mätəqə* in the same year 8. If we add 22 on 8 it becomes 30. There is the rule, of the sum the two should turn out to be 30.¹¹¹

As a rule, *Mätəqə* usually calculated with the number of the days, and the days of it. Whereas,

¹⁰⁷ Uhlig, S (2003). *ENCYCLOPAEDIA AETHIOPICA*. volume IV page 919

¹⁰⁸ Uhlig, S (2003). *ENCYCLOPAEDIA AETHIOPICA*. volume IV page 919

¹⁰⁹ Ibid

¹¹⁰ መሠረት ስብሐት ለአብ (1981) “ትውፊታዊ ሃሳብ ዘመንና ታሪክ” ገጽ 190.

¹¹¹ ጌታቸው ሃይሌ, (2006) “ባሕረ ሃሳብ” 2ኛ እትም፣ ገጽ 39-42.

Yä‘elätat Tāwəsak (number that corresponds to a day) = the day of the Mätəqə . If Mätəqə computed on Saturday, Yä‘elätat Tāwəsak = 8, Sunday=7 Monday= 6, Tuesday=5, Wednesday= 4, Thursday= 3 and Friday=2.

It is important to know epact (‘Abäqte) and the day of the Jewish New Year (Mätəqə), agglutinate with the lunar and for control of moveable feasts of the Ethiopian calendar.¹¹² Mätiqe is calculated with days corresponding and its corresponding number to reckon the lunar day of feasts and fasting¹¹³

If the number of the Mätiqe destined above 14, then the day of the feast of the fasting and feasting days have their own number, with the exception of the fasting of Nineveh. Number for lent 14, Däbərəzäyət 11, Hosa‘ena(Palm Sunday) 2, Səqəlät (true Friday) 7, Easter 9, Rəkəbä kahənät 3, Ascending of Christ 18, Peraclete 28, Fasting of apostles 29 and finally, the fasting of Wednesday and Friday 1.

If the Jewish New Year has been calculated to correspond to the 7 Təqəmt of the Ethiopian calendar and one knows that the Ethiopian New Year fell on a Sunday (Tentyon. = 5), 7 Təqəmt would be a Monday. Thus Passover (190 days later, 17 Miyazya) is a Tuesday, and the Fasika should take place five days later, on Sunday, 22 Miyazya.¹¹⁴

In 2008 EC, Mätəqə is 8, and it celebrated on *Təqəmt* 8, EC, at Monday. The number that signify Monday is 6. $6 + 8 = 14$. According to this result, fasting of Nineveh’s computed on 14th of *Yakatit* (February) 2008 E.C. To identify the day of Easter, we simply add the number that given (*Tāwəsak*) of Easter, with the Nineveh. $14 + 9 = 23$. The Easter feast in 2008 EC will celebrated on 23rd of *Miyazya* (may 2nd 2016). Mätəqə computed on September, but if it is below 14, it computed on October.¹¹⁵

All movable feasts and fasting have their own signifying numbers, except feast of Nineveh. At the same time, the day of the epact enclose its own number. To arrive to the exact day of feasts and fasting it needs adding these two signifying number of days and feast’s and fasting’s number of days.

¹¹² Uhlig, S (2003). ENCYCLOPAEDIA AETHIOPICA volume IV page 919

¹¹³ አባ ወልደ መድኅን “መጽሐፈ ባህረ ሃሳብ,” ያልታተመ፡፡

¹¹⁴ Uhlig, S (2003). ENCYCLOPAEDIA AETHIOPICA. volume IV page 919

¹¹⁵ ያሬድ ፈንታ, (2004). “ባሕረ ሃሳብ”፣ ገጽ 57

Table 8: circulation days of movable feasts and fasting.

No.	Feast and fasting	Signyfing number	Fixed day	Circulating Days
1	Neneveh(ነነዌ)	-	Monday	From <i>Tərri</i> 17- <i>Yäkatit</i> 21
2	1 st day of Lent (ዓቢይ ጾም)	14	Monday	From <i>Yäkatit</i> 1 - <i>Mägabit</i>
3	Mount Olive Feast (ደ/ዘይት)	11	Sunday	From <i>Yäkatit</i> 28- <i>Mägabit</i> 2
4	Palm Sunday (ሆሳዕና)	2	Sunday	From <i>Mägabit</i> 19- <i>Məyazyä</i> 23
5	Good Friday (ስቅለት)	7	Friday	<i>Mägabit</i> 24 – <i>Məyazyä</i> 28
6	Ressurrection (ትንሣኤ)	9	Sunday	<i>Mägabit</i> 26 <i>Məyazyä</i> 30
7	Preist Assembly (ርክበ ካህናት)	3	Wednesday	<i>Məyazyä</i> 20 – <i>Gənəbot</i> 24
8	Asending (ዕርገት)	18	Thursday	<i>Gənəbot</i> 5 – <i>Sänə</i> 9
9	Paraclete(ጳራቅሊጦስ)	28	Sunday	<i>Gənəbot</i> 15 – <i>Sänə</i> 19
10	Fasting of Apostoles (ጾም ሐዋርያት)	29	Monday	<i>Gənəbot</i> 16 – <i>Sänə</i> 20
11	Salivation fast (ጾም ድኅነት)	1	Wednesday	<i>Gənəbot</i> 18 – <i>Sänə</i> 22

Table Source: researcher Complication

As mentioned in the table, all movable feasts and fasting are truck in side 35 days every year. The day of every feast and fasting is also fixed. For example, Neneveh always lay on Monday. To compute the day of all feasts and fasting, use the Mätəqə, and add the signifying number of days. After this step, Nineveh, or annual permanent bin number Mābaja hamār (መባጃ ሐመር) will created. Then add Number that signify feast or fasting to Nineveh, or annual permanent bin number (Mābaja hamār ,መባጃ ሐመር). The signifying numbers to days of the week is beginning from Saturday. Saturday corresponds to Eight, Sunday crossbones Seven, Monday to six, Tuesday to five, Wednesday to four, Thursday to three, Friday to one.

To Exercise this practically: we will do to compute the 2009 EC New Year and feasts and fasting.

Years from Adam to 2009 = 5500 BC + 2009= 7509. $7509 \div 28 = 268$ and extra number 5.

As explained before, five crossbones to Matthew and the New Year lay on Saturday in 2009 EC. To reckoned feast and fasting, we allot 7509 to 19, or 76, or 325 that are lunar cycles. $7509 \div 19 = 395$. Extra number is four. From four, we subtract one. The Number we have in hand is three. To compute the day of Mätəqə we simply move to *Ṭəqəmt* 3. We know as the New Year is lay on Saturday, *Ṭəqəmt* first is Monday, and *Ṭəqəmt* 3 to Wednesday. The number that corresponds Wednesday is four. $4+3 = 7$.

Nineveh’s feast in 2009 EC laid on *Yakatit* 7. This number seven used as a tool to compute the rest feasts and fasting in 2009 EC. The find the lent $4+14 = 18$, *Yakatit* 18. *Dābərəzäyət* (Mount olive feast) $4+11 = 15$. *Mägabit* 15. Palm Sunday $4+2+ 6$, Miyazia 6. Good Friday, $4+7 = 11$ *Məyazyā* 11. Resurrection, $4+9 = 13$, *Mägabit* 13. Assembly of Priests, $4+3 = 7$. *Gənəbot* 7. Ascending $4+18 = 22$, *Gənəbot* 22. Paraclete, $4+28 = 32$, Omit $30 = 2$, Sane 2. Fasting of apostles, $4+29 = 33$ omit $30 + 3$. *Sənə* 3. Salivation Fast, $4+1 = 5$, *Sənə* 5. This is the whole feasts and fasting in 2009 EC.

The 2nd rule is, that when the day of Mätəqə computed on September, then the fasting Nineveh will started in January, but if the day catch October, then Nineveh will stated in February.¹¹⁶

’Abäqte is the calendar system that provided to know the lunar calendar (Ləlet). It reckoned by taking one day from two months. This is called Həšäšə (the dependant variable). For example to know the lunar day (’Abäqte) of the New Year *Mäskäräm* 1, 2008 EC, (September 12 2016)

$1 \text{ Həšäšə} + 22 \text{ ’Abäqte} = 23 \text{ Leləte}$. ’Abäqte is intended with the amount of the solar day and the months extra day (həšäšä ’Äwərah) to spot the lunar day in the solar day.¹¹⁷

The Leləte (night) is used to be acquainted with the number of lunar day as well as the number of the day of the moon. To know when the number of day of the moon, in every night add four on

¹¹⁶ ኔታቸው ሃይሌ (2006) “ባሕረ ሃሳብ” 2ኛ እትም፣ ገጽ 79-80

¹¹⁷ አባ ወልደ መድኅን “መጽሐፈ ባህረ ሃሳብ,” ያልታተመ።

Leläte. Four is (Tərafatä 'Awədə) which helps to compute the number of the moon on the lunar day. Four is the number that helps to spot the day of the moon.

There are two kinds of months of the Lelätes. The first one is hollow month (həşuşə Wārəh ኅጹፅ ወርኅ) and full month (məlu'e Wārəh ምሉእ ወርኅ). The hollow month (həşuşə Wārəh ኅጹፅ ወርኅ) is a calendar month, which consists of 29 days, whereas, the full month (məlu'e Wārəh ምሉእ ወርኅ) covers 30 days. šäräqä Mä'alət (ሠርቀ-መዓለት) means the beginning of day and šäräqä Leläte (ሠርቀ-ሌሊት) represents the beginning of night.

If the Leläte on the New Year is 23, then add four, 23+ 4=27. This day will designate 27th Moon day. Alternatively, this signifies when the moon appears in the sky before 27 days giving its light. When we talk about day, it means the whole 24 hours.

Lunar (šäräqä Leläte), the Jew and Islamic calendars are basically, based on moon and the turning round of the moon around earth. The calendar scholars usually excogitate days by the light of the sun, and the light time of the moon, as illustrated in the table below.¹¹⁸

Table 9: Monthly light of the moon .

Moon's day	Distance from the western horizon		Moon's Light from its 15 th hand	Light that given to moon From sun
	Kekərosə	hour		
1	4	0:48	1	From 105 - 1
2	8	1:36	2	From 98 - 1
3	1	2:24	3	From 91 - 1
4	1	3:12	4	From 84 - 1
5	2	4:00	5	From 77 - 1
6	2	4:48	6	From 70 - 1
7	2	5:36	7	From 63 - 1
8	3	6:24	8	From 56 - 1
9	3	7:12	9	From 49 - 1
1	4	8:00	1	From 42 - 1
1	4	8:48	1	From 35 - 1
1	4	9:36	1	From 28 - 1
1	5	10:24	1	From 21 - 1
1	5	11:12	1	From 14 - 1
1	6	12:00	1	From 7 - 1

.Table source : 'Abərəham ṭenaw

Epact (አባቅቴ) + Mätəqə (መጥቅዕ) = 30. Year of the world -1 'Amätä 'Alamə (ዓመተ-ዓለም ዓድፍ ቦ 19). 'Amätä 'Alamə (Year of the world) – 1 mod. 19.

¹¹⁸ አብርሃም ጤናው, (2000) “አቡሻኸር የቤተክርስቲያን ሒሳብ” ገጽ 198.

T=w-1 ግድፍ በ19

For instance $7508 - 1 = 7507/57/180/171/97/95 = 2$. These are based on. It is a boundary to the day of Mätəqə. It is always restricted between the days of *Mäskäräm* 15 to *Ṭəqəmt* 13 as explained before.

4.5 Biblical Calendar Facts.

Calendar and astronomical issues have played a part in both the Old and New Testament accounts of the Holy Bible. Jews at the time of Jesus Christ were decidedly troubled by signs from the sky and had a tendency to forecast the future from the blowing of the winds. Luke the Evangelist, described Christ's disparaging the Jews and taking steps to describe the reality of such occurrences uttering, "There is".

And when you see the south wind blow, you say, "There will be hot weather"; and there is. Hypocrites! You can discern the face of the sky and of the earth, but how is it you do not discern this time? Luke 12:55

The Ethiopic Enoch magnifies the blowing of winds as fine and terrible foreseeing from the path of blowing. Describing their origins as being from 12 different gates four of them bringing blessing and four punishment.¹¹⁹

Remarkably, Jesus' beloved disciple John, in his revelation, repeated the correlation of wind's path and the circumstances from the blowing route.

After these things I saw four angels standing at the four corners of the earth, holding **the four winds of the earth**, that the wind should not blow on the earth, on the sea, or on any tree.¹²⁰

The Jewish society during the time of Jesus whispered about the consequence of an eclipse on their daily life. The Evangelist Matthew added Jesus Christ's; miraculous healing that had been done on the people under various sicknesses, including epileptics

Then His fame went throughout all Syria; and they brought to Him all sick people who were afflicted with various diseases and torments, and those who were demon- possessed, **epileptics**, and paralytics; and He healed them.¹²¹

These Bible verses focused to exemplify the Jews' convictions on universal changes and Jesus' well known suggestion about how the Jews link life tricks with universal changes.

The following verses of the gospel present another view of the Jews' link with astronomy.

¹¹⁹ Laurence, (1883) "Ethiopian Enoch" Translated from Ethiopic. CHAPTER 75:1. www.futurerevealed.com/ book of Enoch April 2016

¹²⁰ Rev. 7:1 The Holy Bible NKJV

¹²¹ Matthe. 4:24, The Holy Bible NKJV

And when they had come to the multitude, a man came to Him, kneeling down to Him and saying, Lord, have mercy on my son, for he is an epileptic and suffers severely; for he often falls into the fire and often into the water.¹²²

Astronomy played a huge part in the life of the Jews. The book of Job presumed the existence of seven stars, their leader the bear, the most well know star Orion.

Which maketh Arcturus, **Orion**, and Pleiades, and the chambers of the South” Job 9:9 .
The Prophet Amos similarly to Job alput also remarkable implication on astrology.

Seek him that maketh **the seven stars, and Orion**. Amos 3:8

Generally, Israelites, who considered as the people God during Old Testament period , the prohibition to worship Stars, moon and sun, were active on these activities, as well as the prophets of Israel, as a part of the community, were not away from these observes.

4.6 The Ethiopian Calendar in its Civil, Religious, and Astrological Aspects

4.6.1 As the Civil calendar

The present civil calendar in Ethiopia is closely associated with the Ethiopian Orthodox Church. Indeed the church uses it to calculate the New Year, and for the division of season, months, and Years. It is not appropriate to consider all calendric arrangements as the product of the church. Most writers consider that the Ethiopian calendar was adopted from Coptic Church. The Coptic informant articulated that, the Coptic Church didn’t amend or introduce calendric changes to the original ancient Egyptian calendar except for marking the observance of Christian Feasts and fasts.

The Ethiopian Orthodox Church annual affirmation on calendars (’Awajə) didn’t recognize that the Ethiopian calendar was derived from the Copts despite it identifying various sources authors, and translators, like parts of the Anaphora, hagiographies, and other books. St. Demetrius’ amendments have some influence on events around the altar though he only dealt with the days of movable Church feasts and fasts.¹²³

Mäśśārät Səbəhätäl’äb , in his book Təwəfetawe ḥässab zämānəna Tareku and its history” emphasized that this issue requires deep research to avoid misconceptions since Demetrius twisted calendric conceptions, and Ethiopians adopt all calendric classifications from him.

¹²² 17:14 Matte. *The Holy Bible NKJV*

¹²³ Ethiopic synaxarium, Hidar 10

If Ethiopians embrace calendar with other church orders from Demetrius, it follows that “there was no calendar before Christianity in Ethiopia at all”. This is an enormous and yet over sighted conclusion. This researcher in his capacity could not locate any reference as to the existence of written document(s) or any other historical evidences that indicate the pre-Christian Ethiopia’s calendar. On the other hand, it is important to conceive the fact that the absence of evidence could not, by any means, guarantee non-existence of calendar before Christianity.¹²⁴

ነገር ግን ይህ አተራረክ ተተርጉሞ ካልተብራራ ኃሳብ ዘመንን በሙሉ ብቻውን ቀምሮ ያዘጋጀውና ኢትዮጵያም ጠቅላላ የሃሳብ ዘመንን ጓዝ በሙሉ ከቅዱስ ድሜፕሮስ የተቀበለች አስመስሎ እንዳያሳይ በመሠረታዊ የሃሳብ ዘመን ጥናት አቋም ረገድ ሰፋ አድርጎ ማየትና መጠንቀቅ አይከፋም።¹²⁵ It needs deep insight and carefulness to avoid that lead to the conclusion as Ethiopia adopted the whole calendar computing systems from St. Demetrius due to the lack from this narration that unexplained well .

Allotting September 1(September 11/12) as a New Year, the monthly and annual division calenderic ways closed together in Coptic and Ethiopian calendars. Tadros Malaty, in his book “The Coptic calendar and the church of Alexandria” designated the root of current Coptic calendar, that shared similar nature with the Ethiopic calendar.¹²⁶

However, the Roman Emperor, Caesar Augustus, reorganized the calendar that adjusted by Ptolemy III which in 238 B.C. Whereas, the Julian calendar foundation was Julius Caesar’s involvement to reshape former Roman calendar in the course of the guidance, from the “Alexandrian” astronomer Sosigenes, in 46 B.C.¹²⁷

Concerning Gregorian calendar, the foundation of this calendar back to Pope Gregory XIII on the guidance of two scholars, Ghiraldi and Clavius intended to repair the days, which had been lost since the Council of Nicaea, in AD 325, in which, that the date of Easter was set on. To Gregory and his advisers, four days had been lost from the original Julian calendar, and the Vernal Equinox had moved from 25 March to 21 March. This adjustment was the foundation of Gregorian calendar and the end of Julian calendar from most world countries.¹²⁸

The Roman ruler Diocletian persecution was the phenomenon to the formation of Christian Coptic calendar. To Coptic Christians, the assassination of the Coptic Patriarch St. Peter I, and massacre of many Coptic Christians through the command of Diocletian was remarkable to the church. Hence, the year A.D. 284 in which Emperor Diocletian took the thorn became the initial day

¹²⁴ መሠረት ስብሐት ለአብ (1981) “ትውፊታዊ ሃሳብ ዘመንና ታሪክ” ገጽ 14.

¹²⁶ Malaty, T (1989) “the Coptic Calendar and the Church of Alexandria”. page 5

¹²⁷ Malaty, T (1989) “the Coptic Calendar and the Church of Alexandria”. page 6

¹²⁸ Conte, D(2007) “CALENDARS”, La Société Guernesiaise Astronomy Section page 4. www.astronomy.Org.gg. May 2016

of the Coptic Christian calendar.¹²⁹

In the Ethiopian civil calendar, *Mäskäräm*, መስከረም, 1 (September 11/12) is the engagement of New Year. Allocation of New Year in Ethiopia, for the most part related to the climatic change and environmental sights, shortly, it is much related to agricultural practices. Habētā Marəyam Worəqəñäh considers the New Year connotation with September was not only Ethiopic; it was also the Western and Eastern world's agreement. According to his book, “ṭəñəṭawe Yä 'Etəyopəya Təmähərət” most countries in the world, maintained, and observed this day as the budget year.¹³⁰

Informant # 1 consider, as the Ethiopian calendar derived from the ancient Egyptian calendar, allotting of equal 30 days of 12 months and five days of small month as it was established from the year 284 A.D.

This 284 A.D. year, was the occasion that the Roman ruler Diocletian acquired the throne. As bring up on top, the Coptic Church regulated this instance as the “Year of martyrdom”.

To the researcher, accommodating this as the focal point of the Ethiopian calendar, will lead to misplace impartiality. The Aethiopic encyclopedia also holds up this thought as the Coptic ordained the first Bishop to the Ethiopian youngest church during the patriarchate period of St Athanasius.¹³¹

The Ethiopian church was not established as a diocese or a metropolitan before the coming of Fəremənaṭos , this means it is zero possibility to embrace 284 AD, without any encounter between two churches. In one hand, the informant himself did not cite any evidence, which supports his assertion. There is no any indication in the church that could prove the assertion true, on the other.

The Coptic New Year was mainly associated with the flow of Nile River. This river at standstill the only water supply to Egypt as well as the consign for Egyptian civilization. Currently 80% water provider Ethiopia's rainy season is the life of Egyptian population. Due to this, the native people of Egypt worshiped Nile as gods and goddess. Informant #1 accept this as true, that the New Year establishment in Copt was made by the combination of both, astronomy and the arrival of flood, alluvial, water from Blue Nile. To him:

Sirius (Sirius) which is the brightest star in the constellation Orion dog who had been watching his appearance before sunrise off the nose of the Sphinx, which was define site the appearance of this star in the festival on the great God have , the day of the arrival of the flood water to Memphis (Memphis), near Giza.

However, the building of the Ethiopian's New Year was converse to the Coptic construction. In the case of Egyptians, the New Year mark was the arrival of the Nile Flood to a certain place, whereas, in Ethiopia, the New Year spot was the leaving behind of the rainy season, the dropping off to the rivers in the country. The Ethiopian New Year is allied with climatic alteration, as the shiny of New Year's, contrast to the rainy season, the casing of the earth as a result of different kinds of flowers, example the 'Adäyə 'Abāba flower in most parts of the country become visible

¹²⁹ Malaty.T (1989) “the Coptic Calendar and the Church of Alexandria”. page 5

¹³⁰ “የያዝነው የዘመን አቆጣጠር ካራታዊ አንደሆነ ይነገራል። የመስከረምን ዘመን መለወጫነት ዓለም የተስማማበት ነበር ። ምስራቁም ሆነ ምዕራቡ ዓለም እንደቅትዮን ብለው መስከረም ፩ ቀን የበጀት ዓመት አድርገው ያከብሩት ነበር። ሃብተ ማርያም ወርቅነህ(፲፱፻፳፪ ዓ/ም), “ጥንታዊ የኢትዮጵያ ትምህርት፣”ገጽ፪፻፵

¹³¹ Uhlig, S (2003). ENCYCLOPAEDIA AETHIOPICA. volume IV page 113

once a year only in the first month of the New Year.

Outstanding Coptic calendar scholars, and Egyptians, didn't thought as Ethiopians adopted the New Year day other calendar elements from Copts.¹³²

The reason to the falling of New Year over September 11/12 *Mäskäräm* (መስከረም) *first*, is due to the following reasons.

- It said this day was the day of the coming of the sons of Ham, who had given the African Continent. According to the tradition of the church, Ham and his descendants were arrived to their native home land Ethiopia, in this the first equinox month, which rested, on September 11 *Mäskäräm* (መስከረም) *first*. Then they selected their arrival day as the New Year to commemorate.¹³³

- September 11 *Mäskäräm* (መስከረም) *first*, is the month, for the outward show to the first equinox and parallel to the 2nd equinox month, April. Both months always start with the same day. This means, whenever the first day of September lays on Sunday, then April also rest at the same day Sunday. The gate of the sun (Mäsəqot) is also the same in these months¹³⁶. As April considered, the month of Exodus, the determination month to the Passover and the spinning Journey to the promise land of Israelites, Ethiopians captured it as the Exodus from the Old Year to the New Year, in which most people expect good anticipation.¹³⁴

- The New Year in Ethiopia also comprises names, 'Enəqutatašə, and Qəduš Yoħanəs. The Coptic New Year is Ni-Yarouou Feast (Feast of the river). Eritreans also currently, acknowledged this day as Qəduš Yoħanəs, not as New Year. New Year in Eritrea turned from September to January, after the country took its sovereignty, and this one is a mere political decision.

-The calling of the New Year in accordance to Qəduš Yoħanəs (John the Baptist) is also due to that, he considered as a bridge from Old Testament to the New Testament. He was the last prophet before the coming of Jesus Christ, as the testimony of the Holy Bible, "For all the prophets and the law prophesied until John" matt. 1:13. This is why Ethiopians entitle their New Year "St. John the Baptist" Qəduš Yoħanəs.

Generally, the Ethiopian New Year is appropriately the product of the launch with climatic observation, and environmental illustration, religious and cultural concerns rather than implementations.

The allotting of New Year is depending up on solar calendar. The flow of the sun *Awdä sähay* (solar cycle) is the main tool to reckon it. The *Awdä sähay* (solar cycle) is consisting of 28 years. According to Ethiopian church calendar scholars, the whole Years from the time of Adam and Eve to the present year, equivalent to 7508. To come across the New Year day of any year's in the past or future, we simply allot years to 28, until arriving to the number, that lesser amount

¹³² መሠረት ስብሐት ለአብ (1981) "ትውፊታዊ ሃሳብ ዘመንና ታሪክ" ገጽ 32.

¹³³ አብርሃም ጤናው, (2000) "አቡሻኸር የቤተክርስቲያን ሒሳብ" ገጽ 73.

¹³⁴ According to the Calendar tradition, sun in both month rises from the forth gate(4ኛ መስኮት)

than 28.¹³⁵ If the remaining number is one, then the New Year's Day is Tuesday and this year is the year of Matthew.(Zāmānā Matewos).

Table 10: The Lunar Cycle

The Lunar cycle <i>Awdä sähay</i>			
Year	Evangelist	New Year day	Total coverage of days in the Year
1	Matthew	Tuesday	365 days and 6 hours (፫፻፳፭ ቀናት ሰ ከክሮስ)
2	Mark	Wednesday	365 days and 12 hours (፫፻፳፭ ቀናት ፳ ከክሮስ)
3	Luke	Thursday	365 days and 18 hours (፫ ከክሮስ)
4	John	Friday	366 days (፫፻፳፮ ቀናት)
5	Matthew	Sunday	365 days and 6 hours (፫፻፳፭ ቀናት ሰ ከክሮስ)
6	Mark	Monday	365 days and 12 hours (፫፻፳፭ ቀናት ፳ ከክሮስ)
7	Luke	Tuesday	365 days and 18 hours (፫ ከክሮስ)
8	John	Wednesday	366 days (፫፻፳፮ ቀናት)
9	Matthew	Friday	365 days and 6 hours (፫፻፳፭ ቀናት ሰ ከክሮስ)
10	Mark	Saturday	365 days and 12 hours (፫፻፳፭ ቀናት ፳ ከክሮስ)
11	Luke	Sunday	365 days and 18 hours (፫ ከክሮስ)
12	John	Monday	366 days (፫፻፳፮ ቀናት)
13	Matthew	Wednesday	365 days and 6 hours (፫፻፳፭ ቀናት ሰ ከክሮስ)
14	Mark	Thursday	365 days and 12 hours (፫፻፳፭ ቀናት ፳ ከክሮስ)
15	Luke	Friday	365 days and 18 hours (፫ ከክሮስ)
16	John	Saturday	366 days (፫፻፳፮ ቀናት)
17	Matthew	Monday	365 days and 6 hours (፫፻፳፭ ቀናት ሰ ከክሮስ)
18	Mark	Tuesday	365 days and 12 hours (፫፻፳፭ ቀናት ፳ ከክሮስ)
19	Luke	Wednesday	365 days and 18 hours (፫ ከክሮስ)
20	John	Thursday	366 days (፫፻፳፮ ቀናት)
21	Matthew	Saturday	365 days and 6 hours (፫፻፳፭ ቀናት ሰ ከክሮስ)
22	Mark	Sunday	365 days and 12 hours (፫፻፳፭ ቀናት ፳ ከክሮስ)
23	Luke	Monday	365 days and 18 hours (፫ ከክሮስ)
24	John	Tuesday	366 days (፫፻፳፮ ቀናት)
25	Matthew	Thursday	365 days and 6 hours (፫፻፳፭ ቀናት ሰ ከክሮስ)
26	Mark	Friday	365 days and 12 hours (፫፻፳፭ ቀናት ፳ ከክሮስ)
27	Luke	Saturday	365 days and 18 hours (፫ ከክሮስ)
28	John	Monday	366 days (፫፻፳፮ ቀናት)

Data source: 'Abərəham ṭenaw

¹³⁵ አብርሃም ጤናው, (2000 ዓ/ም) “አቡ-ሻኸር የቤተክርስቲያን ሒሳብ” ገጽ 198,

The above Table restrains the New Year, the Leap Year, the year of the evangelist and the Number of days in each year. For example to find when will the New Year destine in 2009 EC, allotting 7509 to 28 = 268. 268 X 28 = 7504. 7509 - 7504 = 5. The lingering number is five. As verified in the table, five indicates as the year of Matthew (Zämäna Matewos) and the New Year Day lay is Sunday,('Ehudä) in coming 2009 EC.

To generalize, Coptic, Sudan, and Ethiopia were integrity were on the land of Cush. These Cushtic People founded their own calendar including the New Year. These people after took their autonomy, turned to their own. The foundation of the civil New Year of Ethiopia was not the product of Coptic adoption. Both countries had the time of dominance each other. The land of Egypt was also said, the land of Cush and his father's Ham. The details will set in the next pages. Hence, it urge closed to right that, Ethiopians shaped their New Year from environmental, cultural, religious, and historical occurrences, while Copts base lays from the appearance of the dog star in the sky with the arrival of the flood together at the same day, as it was mentioned previously in this chapter. Black people of Egypt, Nubia, and Ethiopia, were the rulers of the current counties, Egypt, Sudan, and Ethiopia. They had their own calendar, which was formed from their own circumstances. However, it had been given to Pharos due to segregation of blacks.¹³⁶

4.7 The arrangement of lunar calendar in the Ethiopian calendar

Lunar calendar in Ethiopian, mainly traced to religious days reckoning. Jew, Muslims, and Christians are fully dependant on lunar calendar to identify their feasts and fasting days. The Jewish Passover, the Islamic Hijira, and the Christian Easter reckonings cannot stumble on without lunar calendar.

The Islamic calendar established as a result of the migration of Prophet Mohammad to Yathrib which named Medina. The first action was taken by Caliph Omar Ibn al-Khattab 16 years after migration, consisting year in which the 12-month and every month is equal to 29 or 30 days prescribed by the moon and the number of days of the year where from 354 to 355 days. This calendar was started from June 16, 622 AD¹³⁷

The Jew Epact is influential in determining the day of both the Islamic Hijira and Christians Easter. The epact (19 years cycle) is the Jew Rosh Hashanah (New Year). According to the Ethiopian church calendar, Epact cycle ('Awädä 'Abäqte) holds 19 years, and once in 19 years, the Sun and the Moon start their line of track from the Ethiopian New Year, *Mäskäräm* (መስከረም) first, September 11.

To the Ethiopian church calendar scholars this computation day move toward to them from

¹³⁶ መሠረት ስብሐት ለኦብ (1981) “ትውፊታዊ ሃሳብ ዘመንና ታሪክ” ገጽ 199.

¹³⁷ Informant #I

Moses, St. Demetrius, Apostles, and religious scholars.¹³⁸

If proved, the means of access above would confirm that the root of epact preliminarily from Moses. Ari Beleniky from the Mathematics Department from Ballan University, Israel shore up the reference from the extracting:

¹³⁸ ያሬድ ፈንታ (2004) ባሕረ ሃሳብ፡ ፲፮ 37

Otto Neugebauer belief that the Jewish community in Alexandria has priority before the Church in use of the "epact" theory.¹³⁹

This can completely lead us to the idea that, the Ethiopian current calendar link with Mosses, who was the leader of the twelve tribes of Israel during exodus from Egypt, who married the Ethiopian woman and stayed with the Median priest. The priest was not only his father in law but also his adviser. The Holy Bible indicates the advice of Moses father in law Jethro, and the obedience of Moses to the instruction of his father in law.¹⁴⁰

Here we provide the impression of being, that the advice of Jethro and the obedience of Moses. It is not erroneous to articulate, the priest who dared to guide him after he became the leader of the whole Israel, was also able and proficient to train him different kinds of his native place's wisdoms, like language, calendar, medicine warrior... etc at the time they living together. The land of Median was the place of Cushites people. Moreover, Moses adopted the most determinate tool in calendar from black Cushite Priest Jethro. Then he coach Israelites the epact. Therefore, the epact was the way of reckoning New Year of black medians, and it is neither the pharos nor the Jewish custom.

Then the third century Coptic Patriarch, St. Demetrius used the Jew epact to adjust the day of Easter and other movable feasts and fasting, thinking the position of these events on the formal days. During the time of Demetrius, there were large Jewish communities in Egypt.¹⁴¹The number of migrant Diasporas increased after the destruction of the temple and the over throw of Israel in 70 AD by Romans. He had a chance to meet with these sects because of evangelization. The first mission of evangelization was alert on Jew, due to the Jew expectation on the coming of messiah. St. Demetrius, on his way of evangelization, learned about the epact from the Alexandrian Jew. Then he used it to fix the Movable Christian feasts and fasting. In Ethiopia decidedly, as well as in Egypt, believers do not accept the hindrance of new modernization on their belief. To prevent the refusal of the believers; the new way of reckoning system of St. Demetrius, galvanized the disclosure of God, thought as it is the revelation of God as written on Coptic synaxarium on *Hatur (Hathor) 10 and in Ethiopic synaxarium, Hødar 10 EC*. The clergy once a year, at the day of New Year in front of the congregation, situate into practice the narration calendar which explained in the Ethiopic synaxarium.

¹³⁹ Cited by Belenkiy, A (2016) "JEWISH CALENDAR IN THE ROMAN PERIOD", page 16 www.biu.il/~belenka/ roman March 2016.

¹⁴⁰ Exodus 18:13-26 NKJV

¹⁴¹ Then they were all amazed and marveled, saying to one another, "Look, are not all these who speak Galileans? And how *is it that* we hear, each in our own language in which we were born? Parthians and Medes and Elamites, those dwelling in Mesopotamia, Judea and Cappadocia, Pontus and Asia, Phrygia and Pamphylia, **Egypt** and the parts of Libya adjoining Cyrene, visitors from Rome, both Jews and proselytes, Cretans and Arabs--we hear them speaking in our own tongues the wonderful works of God." Acts 2:7-11 NKJ V

4.8 Moon and stars on lunar calendar

Moon is the source to the foundation of months as highlighted in the last chapter. Stars were the tie to Astrology in ancient civilization of Babylon, Egypt, and Ethiopia. The ancient civilized people were highly pay attention on these practices. These astrological nominations have also enormous place even today. The late novelist Mamo Wädəneh, in his book, *The Coming time* “Mäčew Gize verified the focus of the world population on Astrology and its services. Currently, the impact of astrology precisely pointed up on the life of numerous writers and musicians. According to his book, from the 1750 News Papers, that published in USA, 1220 Newspapers were covered their pages on the issues with astrology and related issues.”¹⁴²

4.8.1 Moon as foundation of calendar

The traditional Ethiopian church calendar has its own explanation on Moon’s rout around the earth, the annual way around the sun, and the time of its light. St. Demetrious, as he adopted the annual motion of the moon determined only 354 days, and the solar year of 365 days from ancient Coptic calendar scholars. From this variation, he resolute the epact that is equivalent to eleven days.

Whereas, Astronomer ’Abušakər , who came forward reached as the variation was not only 11 days. He discovered out the extra fractional times, 22 Kekərosə (one Kekərosə is equivalent to 12 mints) that represent 4 hours and 24 mints. Then he determined to escalate four during reckoning the day of moon which is called Tərafatä ’Awədə (Extra cycle).¹⁴³

There are few Church calendar scholars, who consider this regularly allotting four extra cycle might causes to systematical error. Abba Gäbərə Səlasse, famous calendar scholar in the monastery of Daga ’əstefanos put emphasis on the allotting ways, saying it should follow monthly and annual birth of Epact. To him during zero epact, moon begins its annual travel on the first day of the 13th month *Pag’əmen*. The whole 19 years moon’s paths are listed on the next table. The months of moon are 29 and 30 days. Months of the odd numbers first (Sep), third (Nov.), fifth (Jan.), seventh (Mar.), ninth (May) and eleventh (July) are 29 days and months of the even numbers second (Oct), fourth (Dec), sixth (Feb), eighth (Apr), tenth (June), and twelfth (Aug) are 30 days of Moon. These months are known as full month (Məlu’ə Wāreh) and Odd month (həşuşə Wārehi) months. After identifying first

¹⁴² ማሞ ወደካህ፣(2005 ዓ/ም) “መጪው ጊዜ” ገጽ 17,

“በአሁኑ ጊዜም ቢሆን በርካታ ሰዎች በከዋክብት ምርምርና ጥናት ላይ ተሰማርተዋል። ለሚያደርጉት ከትትልና ምርምር የሚረዱዎቻቸውን አዳዲስ መሳርያዎችም ጨብጠዋል። የሚመለከትዎቻቸውን ከዋክብት ሁሉ አዲስ ምስጢር እንደተገለጻቸው እያስመሰሉ በጋዜጦችና በመጽሐፋቸውና መጻሕፍት አማካኝነት ያስታወቃሉ። የእነርሱን መግለጫ መሠረት እያደረጉም መዘቆኞች እንኳ በየዜናቸቸው ያስተጋባሉ።በአሜሪካ ውስጥ ከሚታተሙት 1750 ጋዜጦች ውስጥ 1220 ጋዜጦች ስለከዋክብት ምርምርና ጥናት መጠጥፎችን ያወጣሉ።”

¹⁴³ አብርሃም ጤናው, (2000) “አቡሻኸር የቤተክርስቲያን ሒሳብ” ገጽ 149.

month, the next step is adding 29 for odd and 30 for even months. For example to acquire the number of days during zero epact ('Aləbo'Abäqte) to the first month September 20 moon day on solar day often we should start from the first day of the 13th month *Ėag'əmen*, the small month which covers only five days plus twenty days of September $5+20=25$. We say 25-moon day.

To reckon according to 'Abušakər's four extra cycle, zero epact plus one odd (Həşäs), which we dig up from two months plus solar day 20. $20+1+4=25$. In this case, two reckoning ways closed to the same consequences. However, the 'Abušakər's four Extra cycle permanently tracks adding four, but the second system, flow decreasing and increasing from five to four depending on the change of epact..

The epact moon cycle of the 13th month was the Jew leap year; according to this, there are six leap years in the Epact of 19 year, in which the months in the year increase from twelve to thirteen months.

However, Ari Belenkiy determined the leap years in the epact (19 years) only 5 or 4.¹⁴⁴

¹⁴⁴ Belenkiy, A (2016) "JEWISH CALENDAR IN THE ROMAN PERIOD", page 16. www.biu.il/~belenka/ roman March 2016.

Table 11: Moon's month in the epact cycle.

month	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	12 th	13 th	
E p a c t	0	Epagu. 1 st	Mäskä መስከ 24	ፒጃጃ ጠጥቅ 24	ዘጅዳ ኅዳ 23	ፐሕሳ ታኅ 23	ፒጅራ ጥር 22	ሃኦ ጥ 22	ጠጃጃ መጋ 21	ጠሃሃ ሚያ 21	ጅጎጎ ግንቦ 20	ሰን ሰኔ 20	ዘጠ ላ ሐምሌ 19	Näh ላከ 19
	11	Nähas ከ 20	Mäskä መስከ 14	ፒጃጃ ጠጥቅ 14	ዘጅዳ ኅዳ 13	ፐሕሳ ታኅ 13	ፒጅራ ጥር 12	ሃኦ ጥ 12	ጠጃጃ መጋ 11	ጠሃሃ ሚያ 11	ጅጎጎ ግንቦ 10	ሰን ሰኔ 10	ዘጠ ላ ሐምሌ 9	
	22	Nähas ከ 9	Mäskä መስከ 3	ፒጃጃ ጠጥቅ 3	ዘጅዳ ኅዳ 2	ፐሕሳ ታኅ 2	ፒጅራ ጥር 1	ሃኦ ጥ 1	ጠጃጃ መጋ 29	ጠሃሃ ሚያ 30	ጅጎጎ ግን 29	ሰን ሰኔ 28	ዘጠ ላ ሐምሌ 28*	
	3	Nähas ከ 28	Mäskä መስከ 22	ፒጃጃ ጠጥቅ 22	ዘጅዳ ኅዳ 21	ፐሕሳ ታኅ 21	ፒጅራ ጥር 20	ሃኦ ጥ 20	ጠጃጃ መጋ 19	ጠሃሃ ሚያ 19	ጅጎጎ ግንቦ 18	ሰን ሰኔ 18	ዘጠ ላ ሐምሌ 17	
	14	Nähas ከ 17	Mäskä መስከ 11	ፒጃጃ ጠጥቅ 11	ዘጅዳ ኅዳ 10	ፐሕሳ ታኅ 10	ፒጅራ ጥር 9	ሃኦ ጥ 9	ጠጃጃ መጋ 8	ጠሃሃ ሚያ 8	ጅጎጎ ግንቦ 7	ሰን ሰኔ 7	ዘጠ ላ ሐምሌ 6	
	25	Nähas ከ 6	Epagu. 5	Mäskä መስከ 30	ፒጃጃ ጥቅ 30	ዘጅዳ ኅዳ 29	ፐሕሳ ታኅ 29	ፒጅራ ጥር 28	ሃኦ ጥ 28	ጠጃጃ መጋ 27	ጠሃሃ ሚያ 27	ጅጎጎ ግንቦ 26	ሰን ሰኔ 26	ዘጠ ላ ሐምሌ 25*
	6	Nähas ከ 25	Mäskä መስከ 19	ፒጃጃ ጥቅ 19	ዘጅዳ ኅዳ 18	ፐሕሳ ታኅ 18	ፒጅራ ጥር 17	ሃኦ ጥ 17	ጠጃጃ መጋ 16	ጠሃሃ ሚያ 16	ጅጎጎ ግንቦ 15	ሰን ሰኔ 15	ዘጠ ላ ሐምሌ 14	
	17	Nähas ከ 14	Mäskä መስከ 8	ፒጃጃ ጥቅ 8	ዘጅዳ ኅዳ 7	ፐሕሳ ታኅ 7	ፒጅራ ጥር 6	ሃኦ ጥ 6	ጠጃጃ መጋ 5	ጠሃሃ ሚያ 5	ጅጎጎ ግንቦ 4	ሰን ሰኔ 4	ዘጠ ላ ሐምሌ 3	
	28	Nähas ከ 3	Epagu. 2	Mäskä መስከ 27	ፒጃጃ ጥቅ 26	ዘጅዳ ኅዳ 26	ፐሕሳ ታኅ 25	ፒጅራ ጥር 25	ሃኦ ጥ 24	ጠጃጃ መጋ 24	ጠሃሃ ሚያ 23	ጅጎጎ ግንቦ 23	ሰን ሰኔ 22	ዘጠ ላ ሐምሌ 22*
	9	Nähas ከ 22	Mäskä መስከ 16	ፒጃጃ ጥቅ 16	ዘጅዳ ኅዳ 15	ፐሕሳ ታኅ 15	ፒጅራ ጥር 14	ሃኦ ጥ 14	ጠጃጃ መጋ 13	ጠሃሃ ሚያ 13	ጅጎጎ ግንቦ 12	ሰን ሰኔ 12	ዘጠ ላ ሐምሌ 11	
	20	Nähas ከ 11	Mäskä መስከ 5	ፒጃጃ ጥቅ 5	ዘጅዳ ኅዳ 4	ፐሕሳ ታኅ 4	ፒጅራ ጥር 3	ሃኦ ጥ 3	ጠጃጃ መጋ 2	ጠሃሃ ሚያ 2	ጅጎጎ ግንቦ 1	ሰን ሰኔ 1	ሰን ሰኔ 30	ዘጠ ላ ሐምሌ 30*

month	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	12 th	13 th
1	Nähas e ነሐ 30	Mäskä መስከ 24	Təqə ጥቅ 24	Həda ኅዳ 23	Tahśa ታኅ 23	Tərr ጥር 22	Yäka t የካ 22	Mäga መጋ 21	Miyaz ሚያ 21	Gənb ግንቦ 20	Sän ሰኔ 20	Haml e ሐም 19	
12	Nähas e ነሐ 19	Mäskä መስከ 13	Təqə ጥቅ 13	Həda ኅዳ 12	Tahśa ታኅ 12	Tərr ጥር 11	Yäka t የካ 11	Mäga መጋ 10	Miyaz ሚያ 10	Gənb ግንቦ 9	Sän ሰኔ 9	Haml e ሐም 8	
23	Nähas e ነሐ 8	Mäskä መስከ 2	Təqə ጥቅ 2	Həda ኅዳ 1	Tahśa ታኅ 1	Tahśa ታኅ 30	Tərr ጥር 30	Yäkat የካ 29	Mäga መጋ 29	Miyaz ሚያ 28	Gənb ግንቦ 28	Sän ሰኔ 27	Ha m ሐም 27 *
4	Nähas e ነሐ 27	Mäskä መስከ 21	Təqə ጥቅ 21	Həda ኅዳ 20	Tahśa ታኅ 20	Tərr ጥር 19	Yäka t የካ 19	Mäga መጋ 18	Miyaz ሚያ 18	Gənb ግንቦ 17	Sän ሰኔ 17	Haml e ሐም 16	
15	Nähas e ነሐ 16	Mäskä መስከ 10	Təqə ጥቅ 10	Həda ኅዳ 9	Tahśa ታኅ 9	Tərr ጥር 8	Yäka t የካ 8	Mäga መጋ 7	Miyaz ሚያ 7	Gənb ግንቦ 6	Sän ሰኔ 6	Haml e ሐም 5	
26	Nähas e ነሐ 5	Epagu. 4	Mäsk ጳመስ 29	Təqə ጥቅ 28	Həda ኅዳ 28	Tahśa ታኅ 27	Tərr ጥር 27	Yäkat የካ 26	Mäga መጋ 26	Miyaz ሚያ 25	Gənb ግንቦ 25	Sän ሰኔ 24	Ha ml ሐም 24*
7	Nähas e ነሐ 24	Mäskመ ስ 18	Təqə ጥቅ 18	Həda ኅዳ 17	Tahśa ታኅ 17	Tərr ጥር 16	Yäka t የካ 16	Mäga መጋ 15	Miyaz ሚያ 15	Gənb ግንቦ 14	Sän ሰኔ 14	Haml e ሐም 13	
18	Nähas e ነሐ 13	Mäskመ ስ 7	Təqə ጥቅ 7	Həda ኅዳ 6	Tahśa ታኅ 6	Tərr ጥር 5	Yäka t የካ 5	Mäga መጋ 4	Miyaz ሚያ 4	Gənb ግንቦ 3	Sän ሰኔ 3	Haml e ሐም 2	Näh ነሐ2 *

Source: Abba Gäbärä säläse

According to the calendar custom, there are twelve gates, in which the light of the moon and the sun passing on. The gates are six in the East and Six in the west. Sun rises through one gate, which the calendar scholars called Mäsəqot (window), two months in a year. However, moon accomplishes the whole gateway in a month.¹⁴⁵

The Ethiopic Enoch also apprehends this contend.

I beheld the gates whence the sun goes forth; and the gates where the sunsets; In which gates also the moon rises and sets; and I beheld the conductors of the stars, among those who precede them; six gates were at the rising, and six at the setting of the sun.¹⁴⁶

As revealed by the Book of Enoch, these gates are the trucks to sun, moon, and stars. Table next table shows the expression to the way of the moon's, sun's, and the stars rising and setting on the gates.

¹⁴⁵ አብርሃም ጤናው, (2000) “አቡ-ኛቸር የቤተክርስቲያን ሒሳብ” ገጽ 165

¹⁴⁶ Laurence, R (1883) “Ethiopic Enoch” 71:3 www.futurerevealed.com/ book of Enoch April 2016

Table 12: Gates of the sun..

No	Gates					
	1 st	2 nd	3 rd	4 th	5 th	6 th
Sun	<i>Tahśasā</i> (ታኅሣሥ) and <i>Tərri</i> (ጥር)	<i>Hədar</i> (ኅዳር) and <i>Yakatit</i> (የካቲት)	<i>Təqəmt</i> (ጥቅምት) and <i>Mägabit</i> (መጋቢት)	<i>Mäskäräm</i> (መስከረም) and <i>Miyazya</i> (ሚያዝያ)	<i>Gənbət</i> (ግንቦት) and <i>Nähase</i> (ገሐሴ)	<i>Säne</i> (ሰኔ) and <i>Hamle</i> (ሐምሌ)

Table Source: ገ'Abərəham ṭenaw

Table 13: Monthly gates of the moon.

		Monthly Moon settling days on the gates.																											
Gate ^s		<i>Mäskäräm</i> (መስከረም)				<i>Təqəmt</i> (ጥቅምት)				<i>Hədar</i> (ኅዳር)				<i>Tahśasā</i> (ታኅሣሥ)				<i>Tərri</i> (ጥር)				<i>Yakatit</i> (የካቲት)							
		1		8	↓			8	↓			8	↓			↓	4	4			↓	4	4			↓	8		
2		2	1			2	1			2	1			2	2				2	2			1	2					
3		2	1			2	1	2		↑	1	2		2	2				2	2			1	2					
4		2	1	1		↑	1	2			1	2		1	2				1	2			1	2					
5		↑	2	1			2	2			2	2		1	2				1	2			1	2					
6			8	↑			7	↑			7	↑		8	↑				7	↑			8	↑					
		Monthly Moon settling days on the gates.																											
Gate ^s		<i>Mägabit</i> (መጋቢት)				<i>Miyazya</i> (ሚያዝያ)				<i>Gənbət</i> (ግንቦት)				<i>Säne</i> (ሰኔ)				<i>Hamle</i> (ሐምሌ)				<i>Nähase</i> (ገሐሴ)							
		1		8	↓			8	↓			7	↓			8	↓			7	↓			8	↓				
2	↓	1	2			1	2			1	1			2	1			2	1			2	1			1	2		
3	2	2	1			↓	2	2		2	1			2	2				2	1			1	2					
4	2	1				2	1	1		↓	2	2		2	1				2	2			1	2					
5	2	1				2	1			2	2	1		↓	2	2		↓	2	2		↓	2	2		2	1	2	
6	7	↑				8	↑			8	↑			4	↑	1		4	↑	4			↑	8	↑				

Source: Abba Gäbärə šölase

An explanation in Table above the rising and setting of the sun in each gates (Mesqot). This might be taken as the changeable occurrence due to the path of the earth around the sun. The path of the moon is also fulfilled through passing on these gates. As indicated in the table, moon touches the whole gates in the space of a month.

The epact is also the pedestal to the reckoning of Jewish Passover. The observance of Passover is the focal point to Christ’s resurrection. As the Holy Bible exposed the Resurrection of Jesus Christ was after the Jewish Passover. The Gospel of John put in plain words on this event:

Then they led Jesus from Caiaphas to the Praetorium, and it was early morning. However, they themselves did not go into the Praetorium, lest they should be defiled, but that they might eat the Passover.¹⁴⁷

Consequently, Christians after resurrection of Christ had a custom of celebrating the feast of Easter after the day of the Passover. Then St. Demetrius fixed the day of Easter in relation to the Jew Passover. The church calendar scholars eagerly attracted to reckon the Jew Passover to perform the Easter feast. Adding 191 day to Beale Mätəqə,(በዓለ መጥቅዕ), 14th lunar day(Leləte), the day next to the day of Mätəqə, ie, Gäbo Mätəqə,(ገቦ መጥቅዕ) , the Holly week,(Samunä Həmamətə ስሙኅ ህማማት) are the procedure to find out the day of Jew Passover.

According to the Ethiopian calendar source, the day of Jew Passover rotates between *Mägabit* (መጋቢት) 25 and *Miyazya* (ሚያዝያ) 23. Mätəqə, ‘Feast of Trumpets’ is the sole means to destine to the Jew Passover. The easiest way to reckon the day of Passover is adding ten on Mätəqə መጥቅዕ, ‘Feast of Trumpets’.

Table 14: Jew Passover in the epact phase.

Year	Mätqé መጥቅዕ,	Epact(አበቅቴ)	Jew Passover
1	0, አልቦ	0,አልቦ	<i>Miyazya</i> (ሚያዝያ) 10
2	19	11	<i>Mägabit</i> (መጋቢት)29
3	8	22	<i>Miyazya</i> (ሚያዝያ) 18
4	27	3	<i>Miyazya</i> (ሚያዝያ) 7
5	16	14	<i>Mägabit</i> (መጋቢት)26
6	5	25	<i>Miyazya</i> (ሚያዝያ)15
7	24	6	<i>Miyazya</i> (ሚያዝያ)4
8	13	17	<i>Miyazya</i> (ሚያዝያ) 23
9	2	28	<i>Miyazya</i> (ሚያዝያ)12
10	21	9	<i>Miyazya</i> (ሚያዝያ) 1
11	10	20	<i>Miyazya</i> (ሚያዝያ) 20

¹⁴⁷ John 18:28 NKJV

Year	Mätqé መጥቅዕ,	Epact(አባቅቲ)	Jew Passover
12	29	1	<i>Miyazya</i> (ሚያዝያ) 9
13	18	12	<i>Mägabit</i> (መጋቢት) 28
14	7	23	<i>Miyazya</i> (ሚያዝያ) 17
15	26	4	<i>Miyazya</i> (ሚያዝያ) 6
16	15	15	<i>Mägabit</i> (መጋቢት) 25
17	4	26	<i>Miyazya</i> (ሚያዝያ) 14
18	23	7	<i>Miyazya</i> (ሚያዝያ) 3
19	12	18	<i>Miyazya</i> (ሚያዝያ) 22

Source: Mārāha‘Ewər

4.8.2 Stars and calendar

Stars are the main concern in the Ethiopian calendar. Stars are alleged as the feeders of days (Mägbätä ‘Elätatə), feeders of months (Mägbätä ’Awurah), and Feeders of Seasons, (Mägbätä ’Azmanə). Feeders of days are groups of seven stars, which share a month in to fourparts¹⁴⁸ According to the Ethiopic calendar explanation, feeders of the months are four great stars, that are dominant on the alteration of the seasons. These stars are dominant in the Ethiopian Astrology with stars that articulates as feeders of the months. Hälämälek, Mələ’el, Mələkəl, and Nar’ēl are the names of the four great stars. The season related to each star explicated in the Table below. The twelve month feeders (Mägbätä ’Awurah), are the stars considered in Ethiopian traditional calendar feeders of twelve months in the year. They also argue as feeders together with the feeders of the season. These stars are the roots for the Ethiopian Astrology. They have their own signs that are alike to Egyptian and Babylonian Zodiac.

Table 15: Stars that feed months and seasons.¹⁴⁹

No	Guide r star	Feeder of the month		month	Period of feeding	sign		
		Ethiopic	English			Ethiopic	Foreign	
							Ancie.	Moder.
1	Mələ’el	Al Haməl	Aries	<i>Mägabit</i> መጋቢት)	30 days & 43 Kekərosə (8 hrs & 36 mint)			
		Al Säwər	Taurus	<i>Miyazya</i> ሚያዝያ)	30 days & 12 Kekərosə (2 hrs & 24mints)			
		Al Gäwəz	Gemini	<i>Gənbət</i> ግንቦት)	31 days & 30 Kekərosə (6 hrs)			
2	Mələkəl	Al šärətan	Cancer	<i>Säne</i> ሰኔ)	31 days & 26 Kekərosə (5 hrs & 12 mnnts)			
		Al Asəd	Leo	<i>Ḥamle</i> ሐምሌ)	31 days & 10 Kekərosə 2 hrs			

¹⁴⁸ አብርሃም ጤናው, (2000) “አቡ-ሻኸር የቤተክርስቲያን ሒሳብ” ገጽ 204,

¹⁴⁹ Ibid, page 206

No	Guide star	Feeder of the month		month	Period of feeding	sign		
		Ethiopic	English			Ethiopic	foreign	
							Ancie.	Moder.
3	Hələmälek	Al Mezan	Libra	<i>Mäskäräm</i> መስከረም	30 days and 10 Kekərosə (2 hours)			
		Al Aqərab	Scorpio	<i>Ṭəqəmt</i> ጥቅምት	20 days and 40 (8 hrs) Kekərosə			
		Al Qāwəs	Sagittarius	<i>Hədar</i> ኅዳር	29 days and 28 Kekərosə (5 hours & 36 mints)			
4	Nar'əl	Al Jädəy	Capricorn	<i>Tahśās</i> ታኅሣሥ	29 days and 23 Kekərosə (4 hours & 36 mints)			
		Al Dälawe	Aquarius	<i>Ṭərri</i> ጥር	30 days and 41 Kekərosə (8 hours & 12 mints)			
		Al Hut	Pisces	<i>Yäkatit</i> የካቲት	30 days and 10 Kekərosə (2 hours)			
		Al Sänəbolah	Virgo	<i>Nähase</i> ነሐሴ	30 days & 42 Kekərosə (8 hrs & 24 mints)			

Table Source: Researcher complication

These stars are the core of astrology in Ethiopian, Coptic, Babylon, and current astrologers. Astrology in Ethiopian tradition mainly utilizes, by adding the Alphabets of given name and mother's name. However, the rest world makes use of the day of birth to find out the person's fine or dreadful future.

The chart of the zodiac, consisting of a twelve star constellation systems, could be of a great use in determining movement of celestial bodies relative to earth. Determining relative movements of celestial bodies from one another is another way of reckoning the flow of time. Among several cultures around the world, the chart employed in determining the fortune or destinies of individuals within society, calibrates the relative and apparent movement of an individual with others. The birth month of an individual taken into consideration indicates which attributed star sign correspond best that very individual. The system in Ethiopia differing with the zodiac system of the West uses the name of individuals and assigning number values to each letter in the name, identifies the appropriate star sign for that individual.

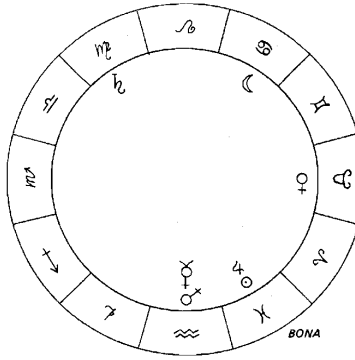


Figure 1: Ancient Zodiac signs

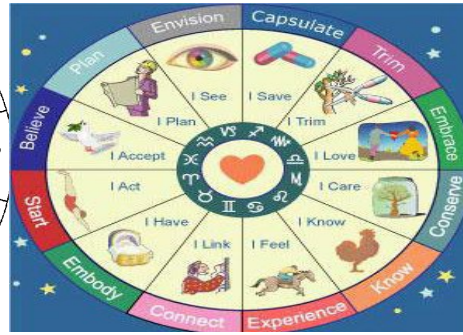


Figure 2: Modern Zodiac signs.¹⁵⁰

Figure Source: Firmicus Maternus

Figure Source: Michael Erlewine



Figure 3: The Ethiopic zodiac(Hassabe Kəwakəbət)

Figure Source: www.physcis.ncat.edu/.../ethio-zodiac.ht...

The figures above illustrate the similarities of zodiac signs from three types of zodiacs. The main question should turn to the founding of these signs. Most writers accept as true, the zodiac roots

¹⁵⁰ Erlewine, M (2007) "How To Learn Astrology" page 60

are either Egypt or Babylon. It is acceptable as the Egyptians were Cushites and the descendants of Ham. Babylonians were also from the same origin. Demsssew Bekele wrote about the link between Cush and Babylon claiming that the Sumerians gave the constellations of the heavens the names of the old kings of the ancient empire of Ethiopians, due to an ancestral link.¹⁵¹

The Ethiopian Zodiac, unlike the Egyptian Zodiac, surmised based of the Ge' ez Alphabets. It considered as the superstition and witchcraft practicing it in the Ethiopian Orthodox Church. However, this book is available in the hands of few clergies, also in the monasteries. This book has no author. However, it is still around the church. It prohibited to exploit and anathematized to practice. Nevertheless, it eradicated from the church.¹⁵²

Various handwriting books used as medicine, healing from demons, and others have their own signs like ziodac sings. The Ethiopian zodiac may influence these books.

The widely used zodiac book in Ethiopia was published by Zemenfase Abriha, prepared by targeting the eradication of the zodiac practice from the believers, in the case of re-evangelizing Orthodox Christians through protestant and reformers regulation. Whereas, at the present time it used as the sole book of zodiac in Ethiopia. I perceived the sixth edition of this book. The Author calls the title of the book “Hateta Menafist”. The book was copied from the original book, which was presented in the monastery of Daga Estifanose. However, this book is stolen or hidden from this monastery. Elder monks of this monastery supposed, as they are an eyewitness, during Emperor Haile Silassie’s officials seeking to copy this book.¹⁵³

Informant #III states, parents of traditional education students in the past, forbade their children to learn Abushakir and parchment writing, fearing that they might join practicing Zodiac. To this researcher, the practice of zodiac was not coming from outside rather than it is the practice of pre-Christian Ethiopia. The owners of zodiac imposed it to the Church, and linked it with religious conviction to enhance acceptance. Although, the Church stabs to avoid it, for the reason that this practice is consequential by few clergies and used as the source of income, it is active at a standstill. The next inscription will provide an idea about the pre Christian zodiac practice in Ethiopia and since Ethiopians were the founders of zodiac.

¹⁵¹ Demsssew,B(2011) “A GLIMPSE OF ANCIENT ETHIOPIAN ASTRONOMY” page 13 www.ethioss.org.et/... April 2016

¹⁵² Awede Negest is magic book. It has 16 columns. It is divergent or competitor to the book of Abushakir and Merha Ewur. The learning of Awude Negest is limited in a small number of individuals. The book is also not available in the hand of all watch crafts.” . “ዐውደ ነገሥት፤ የጥንቆላ መጽሐፍ፤ ፲፮ ክብ ሰንጠረዥ ያለው ያቡሻህርና የመርሐ ዕውር ወደረኛ። በሰንጠረዥ ፲፮ ነገር አለበት። ትምርቱን ግን ከጥቂት ሰዎች በስተቀር ኹሉ አያውቀውም። መጣፋም በጠንቋይ ኹሉ ዘንድ አይገኝም። ኪዳነ-ወልድ ክፍሌ (፲፱፻፵፱ ዓ/ም) “መጽሐፈ ሰዋሰው ወግስ፣ወመዘገበ ቃላት ሀዲስ” ገጽ ፮፻

¹⁵³ “ በስመ አብ ወወልድ ወመንፈስ ቅዱስ ፩ አምላክ።፡ንጽሕፍ እንከ ዘንተ መጽሐፈ አውደ ነገሥት ዘተረከበ ደሴተ ፃና እምደብረ ደቅ እስጢፋ።፡ ዘአስተጋብእዎ ቀደምት አበው ጠቢባን ወፍልሱፋነ ዓለም ከመ ይኸኖሙ መድኃኒተ ሥጋ ወነፍስ።፡ ወያእምሩ ቦቱ ዘይመጽእ በዓለም ሠናየ ወእኩየ፣ ወይንቡሩ በተዓቅቡቱ እምኹሉ ነገር እስከ ለዓለም ዓለም አሜን።፡ ዘመንፈስ አብርሃ(፲፱፻፵፱ ዓ/ም) “ሐተታ መናፍስት” ገጽ ፩፻፳ “In the name of the Father, the Son and the Holy Spirit One God. Amen. We now write this book of Awudä Nägäsät, which founded in the Island of şana, from the church of Däqə ’Estifanos, that collected by wise fathers of wisdom and philosophers for the sake of flesh and soul cure. To predict the coming fine and dire. To stay secured from everything forever. Amen.”

The Ethiopians were the first who invented the science of stars, and gave names to the planets, not at random and without meaning, but descriptive of the qualities which they conceived them to possess; and it was from them that this art passed, still in an imperfect state, to the Egyptians. (Sir Godfrey Higgins, Anacalypsis, Vol. I, Book IV, Chapter)¹⁵⁴

In the Note thirty eight, never bring up the book of zodiac was written by certain person or it was translated, or copied from other languages. It only said, as the authors were wise fathers and philosophers. This means the origin was neither from outside or translation. In other word, not only the Ethiopian zodiac founded by Ethiopians but also Ethiopians were the first founders of zodiac, as illustrated above. There is another source that supports this idea.

It was then, on the borders of the upper Nile among black race of men, that was organized the complicated system of the worship of stars, considered the relation to the production of earth and labors of agriculture. Thus, the Ethiopian of Thebes named stars of inundation or Aquarius, those stars under which the Nile began to overflow; stars of ox or bull, those under which they began to plow¹⁵⁵(Volney's Ruins of Empires, pp 120-122, New York. 1926)

Albert Payek in his writing “the Moral and Dogma” and John Jackson “Ethiopia and the origin of civilization” submitted about Astrology was discovered by Ethiopians.¹⁵⁶

Generally, the Chustic Ethiopians, Nubians, and Medians were the founders of the current zodiac. If we increase the depth of the foundation of zodiac to Babylon, Babylonians were Chustic people us demonstrated in the past pages. There is also evidence that indicates as the center for the whole Cushtic people was Axum.¹⁵⁷

The Ethiopian zodiac system embedded on the given name and mother's name. It is clear that the Ethiopian given name is first name. Then add together mother's name. For example if the first name is Mulu and mother's name Mamitu, searching for the numbers to the Ge'ez Alphabets and the number that represent the Alphabet from the chart is needed.

¹⁵⁴ Demssew, B (2011) “A GLIMPSE OF ANCIENT ETHIOPIAN ASTRONOMY” page 20

www.ethioss.org.et/.../ April 2016

¹⁵⁵ Cited by <https://tseday.wordpress.com/.../ Ethiopian Astronomy / Zodiac/ April 2016>

¹⁵⁶ አዲስ አድማስ ጋዜጣ(አ.ኤ.አ ቅዳሜ ፶ ዓ.ም 22 ቀን 2014) “ገሃዱና ልብወለዱ ዓለም በኮከቦች ትንተና”

¹⁵⁷ አኩሱም (ዕብ: አ:ኩሱም) አ ጥንት ቀዳማዊ ርዕሰ፤ ኩሱም ኩሻውያን የኩሱ ልጆች። ሕዝብ ኩሱ ነገደ ኩሱ። አኩሱም ጥንታዊት ቀዳማዊት የነገደ ኩሱ መዲና። የአህጉረ ኩሱ ራስ፤ እሞን ለአህጉረ ኩሱ። ኩሳ፤ አኩሱም ማለት በሐዲስ ግእዝ ነው። በሳባና በጥንታዊ ግዕዝ በዐረብ በሱርስት በዕብራይስጥ በሴም ቋንቋ ሁሉ ኩሱ እንጂ ኩሳ አይባልም። Axum (Heb. A, kushim) A, means ancient or head. Kushim means Cushaites, the descendants of Cush. Akishum: the ancient and primary capital of Cush, the head and mother of all areas of Cush. kusa , and Axum is the word of New Ge'ez. Sabians, ancient Ge'ez, Surist, Hebrew, and all Semitic languages call Kushi, not Cusa. Kədanewäləd Kəfəle (1949 EC Mäşəḥafä Säwasəw Wägəṣ) page 259. ኪዳነ-ወልድ ከፍሌ (፲፱፻፵፱ዓ/ም) “መጽሐፈ ስዋስው ወግስ፣ ወመዝገብ ቃላት ሀዲስ” ገጽ ፪፻፶፱.

ሙ corresponds 8

ሉ corresponds 4

ማ corresponds 16

ሚ corresponds 12

ቱ corresponds 20.

The sum of the whole alphabet equals 60. $60 \div 12 = 5$. The final number for this person is five. Handling five, then search five from the chart concerning this person.

No number is offered for the additional Amharic Alphabets, as illustrated in the table below.

Most writers the like 'Asərās Yānesāw's, "Yākam Mətasābəya"^{158 163}, and "Təbe Axum Mānu 'Anəta,"¹⁵⁹ Zāmānəfās 'Abərəha's book, "Hateta Mānəfəsət,"¹⁶⁰ and Ayele Bekele's "Ethiopic writing an African system"¹⁶¹ are only situates twenty six Ge'ez Alphabets with the number that correspond to its Alphabets.

¹⁵⁸ አስረስ የኔሰው(፲፱፻፶፩ ዓ/ም) የካም መታሰቢያ ገጽ ፲፯

¹⁵⁹ አስረስ የኔሰው(፲፱፻፶፩ ዓ/ም) ትቤ አክሱም መኑ አንተ; ገጽ ፪፻፶፰

¹⁶⁰ ዘመንፈስ አብርሃ(፲፱፻፵፱ ዓ/ም) “ሐተታ መናፍስት” ገጽ ፸፱

¹⁶¹ Ayele Bekele (1997) “Ethiopic writing an African system” page 79

Table 16: The Ge,ez Alphabets and corresponding number.

No	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	outcome
1	ሀ ስ Hä 1	ሁ ስ Hu 2	ሂ ስ Hi 3	ሃ ስ Ha 4	ሄ ስ He 5	ህ ስ H 6	ሆ ስ Ho 7	ስ
2	ለ ስ Lä 2	ሉ ስ Lu 4	ሊ ስ Li 6	ላ ስ La 8	ሌ ስ Le 10	ል ስ L 12	ሎ ስ Lo 14	ስ
3	ሐ ስ hä 3	ሑ ስ hu 6	ሒ ስ hi 9	ሓ ስ ha 12	ሔ ስ he 15	ሕ ስ h 18	ሖ ስ ho 21	ስ
4	መ ስ Mä 4	ሙ ስ Mu 8	ሚ ስ Mi 12	ማ ስ Ma 16	ሜ ስ Me 20	ሞ ስ M 24	ሙ ስ Mo 28	ስ
5	ሠ ስ sä 5	ሡ ስ su 10	ሢ ስ si 15	ሣ ስ sa 20	ሤ ስ se 25	ሥ ስ s 30	ሦ ስ so 35	ስ
6	ረ ስ Rā 6	ሩ ስ Ru 12	ሪ ስ Ri 18	ራ ስ Ra 24	ራ ስ Re 30	ር ስ R 36	ሮ ስ Ro 42	ስ
7	ሰ ስ Sä 7	ሱ ስ Su 14	ሲ ስ Si 21	ሳ ስ Sa 28	ሴ ስ Se 35	ሰ ስ S 42	ሱ ስ So 49	ስ
8	ሸ sä	ሹ su	ሺ si	ሻ sa	ሼ se	ሽ s	ሾ so	Amha Alp
9	ቀ ስ Qā 8	ቁ ስ Qu 16	ቂ ስ Qi 24	ቃ ስ Qa 32	ቄ ስ Qe 40	ቅ ስ Q 48	ቆ ስ Qo 56	ስ
10	በ ስ Bā 9	ቡ ስ Bu 18	ቢ ስ Bi 27	ባ ስ Ba 36	ቤ ስ Be 45	ብ ስ B 54	ቦ ስ Bo 63	ስ
11	ተ ስ Tā 10	ቱ ስ Tu 20	ቲ ስ Ti 30	ታ ስ Ta 40	ቴ ስ Te 50	ት ስ T 60	ቶ ስ To 70	ስ
12	ቸ čä	ቹ ču	ቺ či	ቻ ča	ቼ če	ች č	ቸ čo	Amha. Alp
13	ኀ ስ hä 20	ሑ ስ hu 40	ሒ ስ hi 60	ሓ ስ ha 80	ሔ ስ he 100	ሕ ስ h 120	ሖ ስ ho 140	ስ
14	ነ ስ Nā 30	ኑ ስ Nu 60	ኒ ስ Ni 90	ና ስ Na 120	ኔ ስ Ne 150	ነ ስ N 180	ኑ ስ No 210	ስ
15	ኘ nä	ኙ nu	ኚ ni	ኛ na	ኜ ne	ኝ n	ኞ no	Amha Alp
16	አ ስ 'Ä 40	አ ስ 'Au 80	አ ስ 'Ai 120	አ ስ 'Ä 160	አ ስ 'Äe 200	አ ስ 'Äe 240	አ ስ 'Äe 280	ስ

No	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	outcome
17	h ḡ Kä 50	h̄ ḡku 100	h̄ ḡḡ Ki 150	h̄ ḡḡ Ka 200	h̄ ḡḡḡ Ke 250	h̄ ḡḡḡK 300	h̄ ḡḡḡḡKo 350	ḡ
18	ñ Hä	ñ̄ Hu	ñ̄ Hi	ñ̄ Ha	ñ̄ HE	ñ̄ H	ñ̄ Ho	Amha Alp
19	ḡ ḡWä 60	ḡ ḡḡ Wu 120	ḡ ḡḡḡ Wi 180	ḡ ḡḡḡḡ Wa 240	ḡ ḡḡḡḡ We 300	ḡ ḡḡḡḡ W 360	ḡ ḡḡḡḡ Wo 420	ḡḡ
20	ḡ ḡ 'Ä 70	ḡ ḡḡ 'Au 140	ḡ ḡḡḡ 'Ai 210	ḡ ḡḡḡḡ 'Ä 280	ḡ ḡḡḡḡ 'Ae 350	ḡ ḡḡḡḡ 'Aə 420	ḡ ḡḡḡḡ 'Ao 490	ḡḡḡ
21	h ḡ Zä 80	h̄ ḡḡ Zu 160	h̄ ḡḡḡ Zi 240	h̄ ḡḡḡḡ Za 320	h̄ ḡḡḡḡ Ze 400	h̄ ḡḡḡḡ Z 480	h̄ ḡḡḡḡ Zo 560	ḡḡḡ
22	ḡ žä	ḡ̄ ž u	ḡ̄ ž i	ḡ̄ ž a	ḡ̄ ž e	ḡ̄ ž	ḡ̄ žo	Amha Alp
23	ḡ ḡ Yä 90	ḡ ḡḡ Yu 180	ḡ ḡḡḡ Yi 270	ḡ ḡḡḡḡ 360	ḡ ḡḡḡḡ Ye 450	ḡ ḡḡḡḡ Y 540	ḡ ḡḡḡḡ Yo 630	ḡḡḡ
24	ḡ ḡDä 100	ḡ ḡḡ Du 200	ḡ ḡḡḡ Di 300	ḡ ḡḡḡ Da 400	ḡ ḡḡḡ De 500	ḡ ḡḡḡ D 600	ḡ ḡḡḡ Do 700	ḡḡḡ
25	ḡ Jä	ḡ̄ Ju	ḡ̄ Ji	ḡ̄ Ja	ḡ̄ Je	ḡ̄ G	ḡ̄ Jo	Amha Alp
26	ḡ ḡḡ Gä 200	ḡ ḡḡḡ Gu 400	ḡ ḡḡḡḡ Gi 600	ḡ ḡḡḡḡ Ga 800	ḡ ḡḡḡḡ Ge 1000	ḡ ḡḡḡḡ G 1200	ḡ ḡḡḡḡ Go 1400	ḡḡḡḡ
27	ḡ ḡḡ tä 300	ḡ ḡḡḡ tu 600	ḡ ḡḡḡḡ ti 900	ḡ ḡḡḡḡḡ tä 1200	ḡ ḡḡḡḡḡ te 1500	ḡ ḡḡḡḡḡ t 1800	ḡ ḡḡḡḡḡ to 2100	ḡḡḡḡḡ
28	ḡ ḡ čä	ḡ̄ č u	ḡ̄ č i	ḡ̄ č a	ḡ̄ č e	ḡ̄ č e	ḡ̄ č o	Amha Alp
29	ḡ ḡḡ pä 400	ḡ ḡḡḡ pu 800	ḡ ḡḡḡḡ p i 1200	ḡ ḡḡḡḡḡ pä 1600	ḡ ḡḡḡḡ pe 1200	ḡ ḡḡḡḡḡ p 2400	ḡ ḡḡḡḡḡ 2 pö 800	ḡḡḡḡḡ
30	ḡ ḡḡ šä 500	ḡ ḡḡḡ šu 100	ḡ ḡḡḡḡ š i 1500	ḡ ḡḡḡḡ ša 2000	ḡ ḡḡḡḡḡ še 2500	ḡ ḡḡḡḡ š 3000	ḡ ḡḡḡḡ šo 3500	ḡḡḡḡḡ
31	ḡ ḡḡ dä 600	ḡ ḡḡḡ du 1200	ḡ ḡḡḡḡ di 1800	ḡ ḡḡḡḡḡ dä 2400	ḡ ḡḡḡḡ de 1300	ḡ ḡḡḡḡḡ d 3600	ḡ ḡḡḡḡḡ do 4200	ḡḡḡḡḡ

No	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	outcome
32	ፈ ጊዮፍ Fä 700	ፋ ጊዮፍ Fu 1400	ፊ ጊዮፍፊ Fi 2100	ፋ ጊዮፍፋ Fa 2800	ፊ ጊዮፍፋ Fe 3500	ፍ ጊዮፍፍ F 4200	ፍ ጊዮፍፍ Fo 4900	ጊዮፍ
33	ፕ ጊዮፍ Pā 800	ፑ ጊዮፍ Pu 1600	ፒ ጊዮፍፊ Pi 2400	ፓ ጊዮፍ Pa 3200	ፔ ጊዮፍ Pe 4000	ፕ ጊዮፍፋ P 4800	ፖ ጊዮፍፋ Po 5600	ጊዮፍ

Table Source: 'Asērās Yānesāw and Zāmānāfās 'Abērāha

The next table covers few explanation of the Ethiopian zodiac, to search full characters, the reader should read the book of Zāmānāfās 'Abērāha's "Hateta Mānafāsats", from page 148 to 176. The Author of this book inserted other charts and different way of finding Ethiopic Zodiac. However, in this thesis the researcher only preferred to point up the mostly known Ethiopic zodiac, its correspondence and distinction between modern zodiac, as well as Ethiopians founded zodiac.

Table 17: The Ethiopic zodiac Chart.

No	Star	Rising direction	Rising day	exemplify	Person's manner
1	Al Hamel		Māgabit (መጋቢት) 14	Lamb	Brilliant, power full and audacious.
2	Al Sāwər	South West	Miyazya (ሚያዝያ) 16	Bull	Kindness, mysteries, money seeker.
3	Al Gāwəz		Gənbət (ግንቦት) 14	Couples	Notorious, eloquent mouth, comic.
4	Al šārəṭan		Sāne (ሰኔ) 21		Deeply thinker, loveless, betrayer
5		South East	Hāmle (ሐምሌ) 26	Lion	Chosen from the womb, powerful under opponents, full of envy.
6	Al Sānəbolah		Māskārām (መስከረም) 6	Perfume	Money collector, adviser, liar, boaster.
7	Al Mezan	South West	Təqəmt (ጥቅምት) 7	Balance	Anger, have many opponents, faithful, lives sadly.
8	Al Aqərab		Hədar (ኅዳር) 20	scorpion	Fairly lover, giver, adulterous
9	Al Qāwəs		Tahśās (ታኅሣሥ) 11	Archer	Mysterious, religious, isolated, practicing prayer & fasting

No	Star	Rising direction	Rising day	exemplify	Person's manner
10	Al Jädäy		<i>Ḥamle</i> (ሐምሌ)	goat	Fearless, quick, cruel, sociable.
11	Al Dälawe		<i>Ṭarri</i> (ጥር 12)	Drawing with	Strong, offensive, good worker.
12	Al Hut		<i>Yäkatit</i> (የካቲት) 12	Fish	Religious, strong, enthusiasms on needy,





Table Source: Zämänəfäs 'Abərəha

All scholars, who have a get in touch with international education, and learned outside consider as the Ethiopian Alphabet is the offspring of Sabians, the group of Ge'ez is also with Semitic language, its writing system was like Hebrew, and Arabic from Right to left until the coming of Christianity, they also emphasized as it should start from A, B, D (አ፡በ፡ገ፡ደ) not from H, L, M (ሀ፡ለ፡መ). There is also a movement in the higher education, to omit similar Alphabets. Like (ዐ፡ሐ፡ሠ፡ፀ፡ኸ)

'Asəräs Yānesāw, in his book “*Təbe Axum Mānu 'Anəta*” Pronounced as Ethiopia stayed 4840 years on Ge'ez since the time to Ham to the present (1951 EC).¹⁶² The Mārāha 'Ewər hold up 'Asəräs Yānesāw's thought. According to the book of Mārāha 'Ewər, Ge'ez is Hammiest language with Coptic language.¹⁶³ Subsequently, the mostly consideration of Ge'ez as Semitic language denied by Ethiopian writer and famous calendar book.









The issue on Alphabet should left to the part who concern, whereas, all alphabets are their own numbers. To write we use Sāmāyə (ሰማይ)፣ not the other similar sāmāyə (ሠማይ), the first one is seven. Seven represents seven heavens, which believed, as there are seven heavens. The name of individuals have also a secret behind. Moreover, avoiding and disordering the Alphabets of Ge'ez, may possibly produce the elimination of astrological formulas.

Table 18: Modern Zodiac signs and characters.

Zodiac Sign	Symbol	Date	Sign Characteristics
<u>Aries</u>		March 21 - April 19	Active, Demanding, Determined, Effective, Ambitious
<u>Taurus</u>		April 20 - May 20	Security, Subtle strength, Appreciation, Instruction, Patience
<u>Gemini</u>		May 21 - June 20	Communication, Indecision, Inquisitive, Intelligent, Changeable
<u>Cancer</u>		June 21 - July 22	Emotion, Diplomatic, Intensity, Impulsive, Selective

¹⁶² አስረስ የኔሰው (፲፱፻፶፩ ዓ/ም) ትቤ አክሱም መኑ አገተ; ገጽ ፪፻፶፭

¹⁶³ B 20 IV-IS, “መርሃ ዕውር”፣ ሐይቅ እስጢፋኖስ ገዳም፣ ገጽ 28

Zodiac Sign	Symbol	Date	Sign Characteristics
<u>Leo</u>		July 23 - August 22	Ruling, Warmth, Generosity, Faithful, Initiative
<u>Virgo</u>		August 23 - September 22	Analyzing, Practical, Reflective, Observation, Thoughtful
<u>Libra</u>		September 23 - October 22	Balance, Justice, Truth, Beauty, Perfection
<u>Scorpio</u>		October 23 - November 21	Transient, Self-Willed, Purposeful, Unyielding
<u>Sagittarius</u>		November 22 - December 21	Philosophical, Motion, Experimentation, Optimism
<u>Capricorn</u>		December 22 - January 19	Determination, Dominance, Persevering, Practical, Willful
<u>Aquarius</u>		January 20 - February 18	Knowledge, Humanitarian, Serious, Insightful, Duplicitous
<u>Pisces</u>		February 19 - March 20	Fluctuation, Depth, Imagination, Reactive, Indecisive

Source: Whats-your-sig.com¹⁶⁴

From Ethiopic and modern date, zodiac we can achieve the awareness on the similarities and variations.

The Ethiopic calendar is also central in the life of farmers. Harvesting and cutting trees was practiced in the past time depending on the calendaric allocation to avoid weevil. Meseret Sibhatleab and Zemenfes Abrha determinate the months of weevil and un-weevil in the following ways.

¹⁶⁴ <http://www.Whats-your-sig.com/zodiac-sign-and-means>. May 2016

Table 19: Ethiopic weevil and non- weevil days.¹⁶⁵

	Un-weevil sənə‘et ጽንዕት	Day	Weevil sənəṣənt ጽንጽንት	Da
1	From <i>Mäskäräm</i> (መስከረም)	1-15	From <i>Mäskäräm</i> (መስከረም)	16-30
2	From <i>Ṭəqəmt</i> (ጥቅምት)	1-23	From <i>Ṭəqəmt</i> (ጥቅምት)	24-30
3	From <i>Hədar</i> (ኅዳር)	1-9	From <i>Hədar</i> (ኅዳር)	10-30
4	From <i>Tahśās</i> (ታኅሣሥ)	1-23	From <i>Tahśās</i> (ታኅሣሥ)	24-30
5	From <i>Ṭərri</i> (ጥር)	1-17	From <i>Ṭərri</i> (ጥር)	18-30
6	From <i>Yakatit</i> (የካቲት)	1-5	From <i>Yakatit</i> (የካቲት)	6-30
7	From <i>Mägabit</i> (መጋቢት)	1-8	From <i>Mägabit</i> (መጋቢት)	9-30
8	From <i>Miyazya</i> (ሚያዝያ)	1-11	from <i>Miyazya</i> (ሚያዝያ)	12-30
9	From <i>Gənbət</i> (ግንቦት)	–	From <i>Gənbət</i> (ግንቦት)	1-30
10	From <i>Säne</i> (ሰኔ)	1-24	From <i>Säne</i> (ሰኔ)	25-30
11	From <i>Ḥamle</i> (ሐምሌ)	1-16	From <i>Ḥamle</i> (ሐምሌ)	17-30
12	From <i>Nähase</i> (ነሐሴ)	1-23	From <i>Nähase</i> (ነሐሴ)	24-30
13	From <i>Ṗag‘əmen/Ṗagume</i> (ጳጉሜን/ጳጉሜን)	1-5	From <i>Ṗag‘əmen/Ṗagume</i> (ጳጉሜን/ጳጉሜን)	–

Table Source: Mäśśärət Səbəhätäl’āb

According to tradition in Ethiopian, wedding was not experienced in the month of *Gənbət*. Because it was a custom of the people in the past as this month weevil month, the baby, who conceived will easy attack by various illness, considering weevil as illness.

¹⁶⁵ መሠረት ስብሐት ለአብ (1981) “ትውፊታዊ ሃሳብ ዘመንና ታሪኩ”ገጽ ፪፻. ዘመንፈስ አብርሃ(፲፱፻፵፱ ዓ/ም) “ሐተታ መናፍሰት” ገጽ ፻፵፯

4.9 Historical Link between Egypt and Ethiopia

Egypt was among ancient state of the world, Kədanewäləd Kəfəle , denoted that the land of Egypt was prearranged to the Noah's Son Ham, and well-known by Ethiopians as Gəbəs ,(ግብጽ,)by Arabs *Misr* مصر and by Jew *Mizraim* מצרים. The most recognized word “Egypt” is the Greek derivation, which means “beach of the sea.”¹⁶⁶

The present Coptic community is not only a religious sect, but also an ethnic community. According to informant #II, this community is the direct descendants of the ancient Egyptians of Pharonic times. After the invention of Arabs under the leader ship of Prophet Mohammad's general Omer Ibn El Ass, Arab tribes settled in Egypt.

It is without shred of doubt that Ethiopians shared many accounts of ancient Egyptian civilizations. E.A Budge trusted as Homer invented the name “Ethiopia” or “Ethiopians”, despite Ethiopia and Ethiopians were glowingly known in the Aegean Sea hundred years earlier than homer's *Iliad* and *Odyssey*. However, Homer's mentioning of Ethiopia and Ethiopians is the available document confirmation.¹⁶⁷

The Ethiopian participation in Trajan war, the Cuthies (Cushites), i.e. Celts, who built the great Temples in India and Britain,(*Anacalypsis*, Vol. I, Book I, Chap. IV,) 168essentially signify the distance downward of Ethiopian black people supremacy beyond Egypt.

Herodotus as cited by Drusilla Houston, described the Ethiopians as Wisemen occupying the Upper Nile, those ‘virtuous mortals, whose feasts and banquets are honored by Jupiter himself. While the Puranas, the ancient historical books of India, speak of the civilization of Ethiopia as being older than that of Egypt.. 169 Drusilla Houston extended the name “Hindu” to mean “Ethiopia”, claiming that Hind and Sind were sons of Cush. He also associated the name “India” with black, and Condor thought it was employed only to designate the home of the Asiatic Ethiopians¹⁷⁰.

Drusilla Houston extended the name “Hindu” to the meaning “Ethiopia”. To him, ancient records of authority made Hind and Sind sons of Cush. He also added as the name “India” means black, and Condor thinks that it was employed only to designate the home of the Asiatic Ethiopians.¹⁷¹

As cited above, the Jew *Mizraim* מצרים, is the word represents “Egypt” and the Ge'ez word for the Hebrew “*Mizraim* מצרים” is Mədəyam (ምድያም). The history of the church and

¹⁶⁶ ኪዳነ-ወልድ ክፍሌ፣ አለቃ፣ (፲፱፻፵፱/ም) “መጽሐፈ ስዋስው ወግስ፣ ወመዝገብ ቃላት ሀዲስ” ገጽ ፪፻፺

¹⁶⁷ Cited by Demissew, B (2011) “A GLIMPSE OF ANCIENT ETHIOPIAN ASTRONOMY” page 6

¹⁶⁸ *Ibid*

¹⁶⁹ *Ibid*

¹⁷⁰ *Ibid*

¹⁷¹ Houston, D(2008)“Wonderful Ethiopians Of The Ancient Cushite Empire”. <http://www.hh-bb.com> May 6 2016

Theologians embedded, as Moses is the author of the Torah¹⁷². If it so, he wrote his own days in the land of Egypt, His childhood life,¹⁷³

He also confirmed his migration' from the hand of pharaoh¹⁷⁴, and his contentious marriage with Ethiopian woman.¹⁷⁵

In the narration of his migration, Moses designated Midian, “*Mizraim* מִצְרַיִם”, Mediam(מִדְיָן) as his relocation lay. There he served his father in law as a shepherd.¹⁷⁶

This can guide us to attain two insinuations. first : “*Mizraim* מִצְרַיִם” was Egypt, as the Hebrew indication, and the land of midian, “*Mizraim* מִצְרַיִם” Mediam(מִדְיָן), was the land of Blacks, as the Holy Bible put the wrangle between Moses and his relatives.

Joseph Campbell claimed , as black natives of Egypt were the initiators of the 12-month calendar correlated to Astronomy, the founders of advancing of Geometrical building of the pyramids, as well as the markers to the writing system¹⁷⁷

He underlined that, Egyptian Nubians were the first human race on earth and head of state of the monarchy of Kush, from 2920 BC – 332 BC, before their fall short to the Roman overrun Egypt. The kind dome of Kush was the most prominent empire in Sudan, Egypt, and Ethiopia. Egypt was mostly espoused most Kushite customs and habits.¹⁷⁸

According to Joseph Campbell, Ethiopians and East Africans were used earliest stone tools in 2 million BC.¹⁷⁹

To bring the matter to close, Black Cushitic (Ethiopians, Midians) were dominant in the present day's Egypt during the time of Moses and the name “*Mizraim* מִצְרַיִם” and “*Cush*” used by Jew simultaneously designates “Ethiopia” and “Ethiopians”.

¹⁷² The Five Jew law books on The Old Testament. I.e Genesis, exodus, Leviticus, Numbers, and Deuteronomy. NKJV

¹⁷³ Exodus 2:1-10 NKJV

¹⁷⁴ Exodus 2:11-13 NKJV

¹⁷⁵ Exodus 2:11-13 NKJV

¹⁷⁶ Exodus 12: 1 NKJV

¹⁷⁷ Exodus 3:1 NKJV

¹⁷⁸ Campbell,J (2003) “THE TIMELINE OF AFRICAN-AMERICAN HISTORY” Starblazer@mns.com,

¹⁷⁹ *Ibid*

The Ethiopian influence on Egypt attributed in the book 'Wonderful Ethiopians of the Ancient Cushite Empire'. According to this book Ethiopians forwarded worshipping and civilization to Egyptians. The Greeks also said that Egyptians derived their civilization and religion from Ethiopia.¹⁸⁰

If the Ethiopians played a central role on Egypt's native soil, it is unrealistic to ignore their influence on Egypt. A survey of Ethio-Egyptian ancient civilization is outside the span of this study. This study is focused on issues related to the calendar. It is vital to put in mind that even the identical calendaric ways in these two calendars have its distinction.

4.10 Coptic characteristic in the Ethiopian calendar

The Ethiopian and Coptic calendars are interconnected in many designate ways. Allocating equal 12 hours to day and night, to a full day, New Year of *Mäskäräm* (መስከረም) 1, September 11/12, *Tut* (*Thout*) 1 of Coptic, Astrological signs, X-mass celebration depending on former Julian calendar with one day extending during leap Year, the number of weekly days, Epact, (it also the same with Jew) are little among numerous calendric similarities.

There are several Coptic characters in the Ethiopian Calendar, as shown in previous chapter. At this position, the main related characters will elucidate. An equal distribution of 30 days, to Twelve months and the thirteenth diminutive month with five additional days as well as the sixth days of the leap year are from top to bottom akin to the Coptic value. However, the months and their names do not match. As indicated in the tables 4.1, Coptic months were based on ancient gods and goddess. Whereas, Ethiopian months, related entirely to the climate, and other activities. 10 out of 12 months were named in relation to climate and agricultural activities. Hence, although the division of Coptic and the Ethiopian months are the same, the names of the months are different.

¹⁸⁰ <http://www.hh-bb.com/Houston,D> (2008) "Wonderful Ethiopians Of The Ancient Cushite Empire". May 6 20016

Table 20: The Ethiopic and Coptic months and their connotation.

No	Ethiopic		Coptic	
	MONTH	Meaning/origin	MON	Meaning/origin
1	<i>Mäskäräm</i> (መስከረም)	Derived from the Ge'ez word “ <i>Mäset kärämät</i> ”(ምሴተ ከረምት): “the evening of rainy season”, due to the close down of rain in this month. ^{181 186} It also said resultant from the expression “ <i>Kärämä</i> ”,(ከረመ) “staying” ¹⁸²	<i>Tut</i> (<i>Thout</i>)	Derived from the god Thoth, god of knowledge and the inventor of the writing implement and writing. ¹⁸³
2	<i>Təqəmt</i> (ጥቅምት)	It means “to instigate job” Wäreha tənätä <i>Gəbər</i> (ወርጌ ግብር/ጥንተ ግብር): ¹⁸⁴	<i>Babah</i> (<i>Paopi</i>)	Imitative from the name of “my God”. It marked on planting and greening the earth <i>Palmzaroat</i> ¹⁸⁵
3	<i>Hədar</i> (ኅዳር)	This word seems the same in Coptic and Hebrew and Ethiopic. The Hebrew word to this word is “Adar”. “ <i>Hədar</i> (ኅዳር)” means laying over, due to farmers in this month laying over in their farm land to care their ranch. ¹⁸⁶	<i>Hatur</i> <i>H</i> <i>athor</i>	Original derivation from the name of the god <i>Hathor</i> , the goddess of love and beauty Queen of Heaven and joy, love, and which offset when Greece Aphrodite. The which month beautifying the face of the earth the beauty of Agriculture. ¹⁸⁷
4	<i>Tahsäś</i> (<i>ታኅሣሥ</i>)	From the Ge'ez word <i>ḥasäsä</i> (ኅሠሠ) “probing”. ¹⁸⁸	<i>Kiyahk</i> (<i>Koiak</i>)	Devoted to the god Ka Ha Ka any hurry sacred Apis and the goddess Sekhmet and six goddess of good. ¹⁸⁹
5	<i>Tərri</i> (ጥር)	Month of “deepness” <i>Məṭəqät</i> (ምጥቀት) and “tallness” <i>Rizmet</i> (ርዝመት). It assumed that the wall of Babel distorted in this month. ¹⁹⁰	<i>Tubah</i> (<i>Tobi</i>)	Originated the god Omso inflation a form of god Amun Ra Tiba in Upper Egypt and the God of nature the growth in the early to frequent rain and fertilize the earth ¹⁹¹

¹⁸¹ ኪዳነ-ወልድ ክፍሌ፣ አለቃ፣ (፲፱፻፵፱/ም) “መጽሐፈ ስዋስው ወግስ፣ ወመዝገብ ቃላት ሀዲስ” ገጽ ፯፻፪

¹⁸² አብርሃም ጤናው, (2000) አቡሻቸር የቤተክርስቲያን ሒሳብ, ገጽ 203.

¹⁸³ Fr. Angelos, N (2014) “Coptic months, Egyptian origins” MA Thesis. Egypt Coptic institute

¹⁸⁴ ኪዳነ-ወልድ (፲፱፻፵፱/ም) “መጽሐፈ ስዋስው ወግስ፣ ወመዝገብ ቃላት ሀዲስ” ገጽ ፭፻፱

¹⁸⁵ Fr. Angelos, N (2014) “Coptic months, Egyptian origins” MA Thesis. Egypt Coptic institute

¹⁸⁶ ኪዳነ-ወልድ (፲፱፻፵፱/ም) “መጽሐፈ ስዋስው ወግስ፣ ወመዝገብ ቃላት ሀዲስ” ገጽ ፱፻፸፫

¹⁸⁷ Fr. Angelos, N (2014) “Coptic months, Egyptian origins” MA Thesis. Egypt Coptic institute

¹⁸⁸ ኪዳነ-ወልድ (፲፱፻፵፱/ም) “መጽሐፈ ስዋስው ወግስ፣ ወመዝገብ ቃላት ሀዲስ” ገጽ ፱፻፹፪

¹⁸⁹ Fr. Angelos, N (2014) “Coptic months, Egyptian origins” MA Thesis. Egypt Coptic institute

¹⁹⁰ ኪዳነ-ወልድ ክፍሌ (፲፱፻፵፱) “መጽሐፈ ስዋስው ወግስ፣ ወመዝገብ ቃላት ሀዲስ” ገጽ ፭፻

¹⁹¹ Fr. Angelos, N (2014) “Coptic months, Egyptian origins” MA Thesis. Egypt Coptic institute

Ethiopic			Coptic	
No	MONTH	Meaning/origin	MON	Meaning/origin
6	<i>Yäkatit</i> (የካቲት)	“To gather”, <i>kätäa</i> , (<i>ከተተ</i>) is thought that the core meaning of the word seem to harvest and the eve of small rainy season, <i>Bäläg</i> , (<i>በልግ</i>) ¹⁹²	<i>Amshir</i> (<i>Meshir</i>)	Taken from the God of storms Mushiral ¹⁹³ .
7	<i>Mägabit</i> (መጋቢት)	“Nourishing”፣ “ <i>mägäbä</i> ” (<i>መገበ</i>) is the root-word of this word. The month of 2 nd Equinox(an equal hours of day and night) ¹⁹⁴	<i>Baramhat</i> (<i>Paremhat</i>)	Attributed to (Bamout) God of heat, it called the month of sun and heat when it is most Vtndj plantings ¹⁹⁵ .
8	<i>Miyazya</i> (ሚያዝያ)	Originated from the word <i>mize</i> (<i>ሚዜ</i>) “Best- man”. It also said the month of Bride, groom and Best Man. Most wedding ceremonies in Ethiopia experienced in this month. This month strokes Post- Easter in Ethiopia. ¹⁹⁶	<i>Baramundah</i> (<i>Paremuude</i>)	Dedicated to the god (Reno) and (Rnodh) God biting wind and the god of death is depicted in a rattlesnake and the life of the implant ends and the land becomes barren ¹⁹⁷ .
9	<i>Gänbot</i> (ግንቦት)	The “neighbor” of <i>Kärämät</i> (rainy season) <i>Gäbo Kärämät</i> (<i>ገቦ ክረምት</i>) ¹⁹⁸	<i>Bashans</i> (<i>Pashons</i>)	Dedicated to the god (Khonsu) ,God of the moon and the long day and short night. ¹⁹⁹

¹⁹² ኪዳነ-ወልድ (፲፱፻፵፱/ም) “መጽሐፈ. ስዋስው ወግስ፣ ወመዝገብ ቃላት ሀዲስ” ገጽ ፭፻፸፮.

¹⁹³ Fr. Angelos,N (2014) “Coptic months, Egyptian origins” MA Thesis. Egypt Coptic institute

¹⁹⁴ ኪዳነ-ወልድ (፲፱፻፵፱/ም) “መጽሐፈ. ስዋስው ወግስ፣ ወመዝገብ ቃላት ሀዲስ” ገጽ ፲፻፳፪.

¹⁹⁵ Fr. Angelos,N (2014) “Coptic months, Egyptian origins” MA Thesis. Egypt Coptic institute

¹⁹⁶ ኪዳነ-ወልድ (፲፱፻፵፱/ም) “መጽሐፈ. ስዋስው ወግስ፣ ወመዝገብ ቃላት ሀዲስ” ገጽ ፮፻፸፪.

¹⁹⁷ Fr. Angelos,N (2014) “Coptic months, Egyptian origins” MA Thesis. Egypt Coptic institute

¹⁹⁸ ኪዳነ-ወልድ (፲፱፻፵፱/ም) “መጽሐፈ. ስዋስው ወግስ፣ ወመዝገብ ቃላት ሀዲስ” ገጽ ፭፻፱

¹⁹⁹ Fr. Angelos,N (2014) “Coptic months, Egyptian origins” MA Thesis. Egypt Coptic institute

		Ethiopic	Coptic	
No	MONTH	Meaning/origin	MON	Meaning/origin
10	<i>Sāne</i> (ሰኔ)	Month of the attractive breed Wāreha Ṣānayā zərər'e (ወርቅ ሠናዩ ዘርዕ), Ṣānāyā (ሠነዩ) 'Amarā "good looks" (አማረ) of Ge'ez is the derivation word to this month. ²⁰⁰	<i>Ba'unah</i> (<i>Paoni</i>)	It reported that the origin (Pa Unni) and attributed to the God of metals because the intensity of the heat Tsui minerals and so-called Baounah stone. ²⁰¹
11	<i>Ḥamle</i> (ሐምሌ)	Related to the Ge,ez word "leaf" ḥamāmlā (ሐምሌ). "Leafy" (ቅጠላም). In this month, the whole plants generate their leaf due to adequate rain in most parts of the country. ²⁰²	<i>Abib</i> (<i>Epip</i>)	It is reported that the origin Hoba, god of joy Awahaba god of the Nile and was told that the god of snakes, because the big snake, Aviv symbolizes the darkness ²⁰³
12	<i>Nāhase</i> (ነሐሴ)	Which means "Last Month". <i>Yāwārat Mäčäräša</i> . (የወራት መጨረሻ) ²⁰⁴	<i>Misra</i> (<i>Mesori</i>)	Corresponds to the Taurus name Massey ²⁰⁵
13	<i>Ṗagwāmen</i> / <i>Ṗagume</i> (ጳጉሜን/ጳጉሜ)	Derived from the Greek word epagomenac which mean Extra, Odd. "Tāwāsaq, čamari" ተውሳክ ጭማሪ ²⁰⁶	<i>Nasi</i> (<i>Pi Kogi Enavot</i>)	Little Month ^{207/207}

Source: Researer complication

²⁰⁰ ኪዳነ-ወልድ (፲፱፻፵፱ዓ/ም) "መጽሐፈ ስዋስው ወግስ፡ወመዝገብ ቃላት ሀዲስ" ገጽ ፯፻፸፪

²⁰¹ Fr. Angelos,N (2014) "Coptic months, Egyptian origins" MA Thesis. Egypt Coptic institute

²⁰² ኪዳነ-ወልድ (፲፱፻፵፱ዓ/ም) "መጽሐፈ ስዋስው ወግስ፡ወመዝገብ ቃላት ሀዲስ" ገጽ ፬፻፵፱

²⁰³ Fr. Angelos,N (2014) "Coptic months, Egyptian origins" MA Thesis. Egypt Coptic institute

²⁰⁴ ኪዳነ-ወልድ (፲፱፻፵፱ዓ/ም) "መጽሐፈ ስዋስው ወግስ፡ወመዝገብ ቃላት ሀዲስ" ገጽ ፯፻፴፬

²⁰⁵ Fr. Angelos,N (2014) "Coptic months, Egyptian origins" MA Thesis. Egypt Coptic institute

²⁰⁶ ኪዳነ-ወልድ (፲፱፻፵፱ዓ/ም) "መጽሐፈ ስዋስው ወግስ፡ወመዝገብ ቃላት ሀዲስ" ገጽ ፱፻፺

²⁰⁷ Malaty,T (1989) "The Coptic Calendar and the Church of Alexandria". Page3

4.11 The Ethiopian and Julian Calendars

The Julian calendar was used in the world since 45 B.C. Due to the Roman invention of most parts the world; it also became the most widely used calendar until the upcoming of Gregorian calendar, in October 1582. Some Orthodox Christian Churches continued to make use of the Julian calendar for Christ-mass celebration and other religious functions.²⁰⁸ Ethiopia as among the Oriental Orthodox Churches used the Julian calendar to X-mass reckoning day only. X-mass is included with non-movable feast which celebrated on *Tahśas* (ታኅሣሥ ፳፱ January7)and during leap year January 6 *Tahśas* (ታኅሣሥ)፱፰ alike other Orthodox Christian Churches. The unique character in this calendaric system is the shifting of X-mass feast due to leap year. Ethiopians, Copts, Russians, and other Orthodox denominations tag along this kind of calendar. Whereas,some scholars, in Ethiopia, denied the shifting Christ mass celebration for the duration of leap year. Abushakir asked, a question on that, saying how we celebrate in the day, thatvirgin didn’t bring forth?²⁰⁹(’Abušakər ’Anəqäşə three).

Kədanewäləd Kəfəle insited that Pəgʷəmen/Pəgume (ጳጉሜን/ጳጉሜ) is not included in the epact, and that shifting the day for the commemoration of the birth of Christ is a bad mistake. Shifting Christmas began under ’Aməda şəyon, but is unjustified since if it is caused by leap year, we should shift other feasts. Like Epiphany. However, he wrote on the same book, as Gena(ጌ ና) is the eve of Christ Mass. He wrote also as the word Gena(ጌና) is derived from Greece word which means eve of Christ Mass.²¹⁰

Whereas the sect of the Qəbats celebrates Christmass constantly on *Tahśas* (ታኅሣሥ ፳፱ January7), Ethiopian Orthodox Church, answers that from a Tewahido position, the change derives from: “Christ is prefect human nature without sin and perfect divine. During leap Year, His whole day from announcement to His birth will extend one day during leap, which means, from nine months and five days to six days. To adjust for this one day should be removed.²¹¹

Ethiopic *synaxarium*, on the *Tahśas* ታኅሣሥ ፳፱ ፳፳፻ January, point toward the

²⁰⁸ http://www.centerforfinancialstability.org/hfs/Calendar_notes.pdf

²⁰⁹ በመርሐ ጽድቅ ባህላ ሃይማኖት(፲፱፱፻፰ ዓ/ም) “ትንሣኤ ዘጉባኤ ማተሚያ ቤት” ገጽ ፻፵፰ ላይ የተጠቀሰ: “በእጩ ይደሉ ከመ ናብዕል ወንብላዕ በዕለት ዘኢወለደት ቦቱ ድንግል” አቡሻህር ወልደ አቤል ሄሬም አንቀጽ ፫.

²¹⁰ ኪዳነ-ወልድ (፲፱፻፵፱) “መጽሐፈ ስዋስው ወግስ፣ወመዝገበ ቃላት ሀዲስ” ገጽ ፱፻፭ .

²¹¹ ኪዳነ-ወልድ (፲፱፻፵፱) “መጽሐፈ ስዋስው ወግስ፣ወመዝገበ ቃላት ሀዲስ” ገጽ ፫፻፳፭

²¹² ስንክሳር ታኅሣሥ ፳፱ ቀን የሚነበብ፡፡አስመ አበዊን መምህራን ቤተክርስቲያን ተሰነዳው በምክሮሙ ከመ ይግበሩ በዓለ ልደት ክቡር ወቅዱስ በክልኤ ዕለት እስመ ልደት ኮነ በደኃሪ ሌሊት አመ ፳፱፻፳ በመዓልት አመ ፳፱፻ ለታኅሣሥ ወሰበ ይከውን ጳጉሜን ፯ተ በይዕቲ ዕለት ይከውን በዓለ ልደት አመ ፳፱፻፳ በሌሊት ወለአመ ኮነ

celebration of Christ mass in two diverse days. According to the book, Fore Fathers, scholars of the church approved to observe on top of two days, due to leap year.²¹³

The Ethiopian and the most Orthodox Church, Christ mass and Epiphany observance days are similar. There are also similarities on celebration of Resurrection.

Despite the only similarity on celebrating religious feasts, most foreigners claim the Ethiopian calendar is Julian. Gerōma 'Awəgəčew considered this claim as the result of anti-black racism.²¹⁴

ጳጳሳዊነት ለጳጳሳዊነት ይከውን አመ ፳፻ ወከመዝ ሠርዑ ወአዘዙ ከመ ይገበሩ በዓለ ልደት ከቡር ርዕሰ በዓላት ቅድሳት”

²¹³ በመርሐ ጽድቅ ባህላ ሃይማኖት(፲፱፻፶፱ዓ/ም) “ትንሣኤ ዘጉባኤ ማተሚያ ቤት” ገጽ ፻፵፰

²¹⁴ ግርማ አውግቶው (ዶ/ር) 2008 ዓ/ም “ዘመን አቆጣጠር”ገጽ XXX

CHAPTER FIVE

5. CONCLUSION, AND RECOMMENDATIONS

5.1 Conclusion

Nations around the world use different types of calendar. There are diverse minority communities around the world that also use their own reckoning system in allotting time. The Sidama people of Ethiopia, for example, have their own unique day when celebrating their New Year, the Fiche Chamballala, which is recorded by the UNESCO's intangible heritage lists.²¹⁵ Among the minorities of the Ethiopia people, the Borenas had also developed their own calendar system around 300 B.C.²¹⁶

Although there are varied systems of calendar, for various historical and perhaps religious reasons only few Calendaric systems are in active use for most parts of the world. Though only few Calendaric systems dominated most part of the world, no one nation proffered these dominant calendars regarding to the rightness of these calendars. The Gregorian calendar, Islamic Hegira, Julian, Coptic, and Ethiopic calendars, as well as the Chinese, Indian and Jew calendars are the most widely used types of calendars.

Religious and philosophical endeavors practiced at an earlier period of the human history among the Cushitic people along the Nile delta and Nile River, the foundation for early human civilization was established. Articulating metaphysical aspect of reality for the ancient civilization, core principals governing the system of Calendar, the Zodiac, and religious activities were established along the Nile earlier than what could be found in the other parts of the world. Subsequently the area along the Nile Delta and River have been the principle source for our modern day calendar system, in allotting and reckoning the number of hours, days in a year. This line of thought conveys the impression that the restriction of the days in a week as seven and 365/366 solar days of the year in most current systems of calendar around the world might be inclined to trace its source along the Nile valleys.

In book of Genesis, Moses explicates the rationale behind the allotting of seven days for a week.²¹⁷ Moses did this classification of days of the week based on the Cushitic tradition and was

²¹⁵ [www.2merkato.com/.../UNESCO Registers Sidama's New Year in Ethiopia...](http://www.2merkato.com/.../UNESCO_Registers_Sidama's_New_Year_in_Ethiopia...), May 07 2016

²¹⁶ Demssew, Bekele (July 3, 2011) "A GLIMPSE OF ANCIENT ETHIOPIAN ASTRONOMY" page 44 www.ethioss.org.et/.../ April 2016

²¹⁷ Gen. 1:1-31 & 2:1-2 NKJV

not inspired or directed by God, as one might expect. The Holy Bible, for example, when allotting time uses what might be referred to as “Divine time” describes time in parts as in “in the first part” rather than classifying time as the first, second, third, etc. day. The differences in days between the “Divine time” and “Earth time” are astronomical in proportion. This vast gap of time found between the Divine and Earth is accounted by Moses; elaborating that for example one day here on Earth is not exactly twenty-four hours but might even be a million earth years. Consequently, it is right to say “in the first part”, rather than saying in the first, second third...day. In short, the time division for day in the Bible is not equivalent to the current use of time. The Holy Bible proved as the variation on the allotting of calendaric days between human and God. “But, beloved, be not ignorant of this one thing, that one day is with the Lord as a thousand years, and a thousand years as one day”²¹⁸ The history Ethiopian calendar history is not clearly branded, as it is the case with the Julian, Coptic, or the result of local groundwork.

The variation with Coptic and Julian, and the cause that brought the differences in allotting time of days and months in the Year, the seven to eight year gape with Gregorian calendar is placed inappropriately. We can determine the Coptic, Julian, or local characters in the Ethiopian calendar. We should distinguish the foreign and local characters in our calendar, to arrive to its root foundation.

There is no link between Julian and Ethiopian Calendars, except religious observance, which is Resurrection, Christmas, and Epiphany. Informant #IV spoke, as there was the same Christ Mass day in all of the Christian worlds, celebrated on same day of January 7. Whereas, the Western Christians rehabilitated their Christmas, day from January 7 to November 25, to coincide with their former principal day of worship, the day in which they worshiped the Sun god. The Coptic and Ethiopian calendars are identical in allotting of months and determining when the leap year is, as well as the mutable religious feasts and festivals. The Solar system of calendar used in the Ethiopia originates from the Nile Delta and River valley, an area as indicated in the Bible as “the Land of Cush”²¹⁹

This area being the heart of early human civilization, developed the tradition of time management practice and allotting days in all months and years, and subsequently establishing the centers for star worshipping, astronomy and zodiac systems. The ancient Ethiopians, Sudanese, (Nubians), and Copts were descendants of the Cushitic people who established their center of civilization in Axum as the main metropolitan. Moses adopted the Jew’s Epact from these people during the period that Israelites were in Egypt.²²⁰

²¹⁸ 2 Peter 3:8 KJV

²¹⁹ “The Name of the Second River is Gihon: the same is it that compasseth the whole land of Ethiopia.”

²²⁰ Gen. 2:13 NKJV.

Ethiopians having adjusted their calendar in accordance with their seasons of climate and agricultural activities produced the first zodiac system in this region. Pre-Christian Ethiopians were using their Cushitic calendar, partially the people who have had contact with the Jew were using the calendar that was recalibrated by Moses, since Ethiopians were considered, as testified in the Holy Bible, to having an important link with the Old Testament. In the earlier developmental stages of the scriptures, several references made to Ethiopia credits individuals with important core involvement in the parts of the Old Testament.

The Ethiopian eunuch who was under the Queen Candace, for example, was mentioned among the early fathers as one of the Jew Christian characters in the narration of the New Testament 221

There was also an incident regarding one particular Magi who is said to have approached Jesus in veneration and this Magi is often regarded as an Ethiopian.

The linking of this particular Magi appears purposeful as to show the transition from the Old to the New Testament in relating the practice of astrology and astronomy both to the old and new world perspective. The Ethiopian calendar is a luni-solar system. The solar calendar based on the epact, reckons the days for the New Year, from the New Year the civil calendars, while the solar calendar mainly used for religious function reckons the days for feasts and fasting practices.

Informant #II well thought-out, as there is no Julian influence in Coptic calendar. According to this informant, Caesar Augustus only shaped the Julian calendar, after he encompassed a chance to evaluate the Julian calendar with Coptic one. Hence, there is no Julian influence on the Ethiopian and Coptic calendars.

There is fusion of foreign calendars with Ethiopian calendar. The Hebrew seventh years (suba'e ሱብ ኤ) and jubilee, the seven times seven's 49 years (E'yobeləyu ኤዮቤልዮ)፣ The Coptic church the reckoning of feast and fasting are calendar elements that were adopted.222

The Ethiopian calendar covering astrological and zodiac configuration determines and declares for the appropriate time of weevil and non-weevil phase for agricultural activities, prediction of the future by studying and contemplating the direction of the breezing wind direction. Varieties of traditional medicines, which often extracted from plants, have also important part in the Ethiopian calendar system. Due to the lack of classification on traditional medicines and hence failure to distinguish the fake from genuine, many innocent individuals have become victims by the hand and works of charlatans. Studying the Ethiopian calendar system may help to reach to the truth, which is going to be useful in distinguishing the beneficial from the hazardous.223

²²¹ *Acts 8:26 NKJV*

To finalized, the Ethiopian Calendaric system, initially after constructing investigation center, should be encouraged and calibrated to modernization in accord with current local and world situation in view of nurturing and strengthening both the secular and clergies system. This current research project might be use as a simple provocation to all scholars with competence who would be willing to contribute in improving the different stages involved in the studying the Ethiopian calenderic system.

5.2 Recommendation

There are several challenges and difficulties to a person who has not gone through the traditional church education system when attempting to study the Ethiopian calendar system. To avoid this difficulty, the first step should be centered on the readjusting of the calendar from religious and traditional influences to neutral and scientifically structured system. This can attract everyone to learn and investigate this ancient time reckoning technology. Informant #IV, stated, the collapse of calendar education in Ethiopia was caused due to the amendment of regulation that obligated the church administrators to declare the New Year, feasts and fasting in the New Year in front of the crowd. Informant #V assumed that the reason behind the falling down of calendar Education in Ethiopian Orthodox Church is resulted from the lack of well-educated instructors in the traditional schools and theological colleges. To him corruption, ethnicity, and shortage of finance tackled many scholars to join these educational centers. I met with the person who is an administrator in Ethiopian Orthodox Church Educational and Training Center. According to the administrator there is no department in Ethiopian Orthodox Educational center, to develop calendar education. .

To solve the disappearance of calendar education, measures, like improving the education of calendar in the theological colleges is necessary. The Ethiopian Orthodox Church should establish centre at a head quarter level of the See, which contains highly skilled human power in calendar reckoning, as well as persons who are qualified in scientific education. The job of individuals in this centre should be to focus on investigating and searching its origin on every part concerning calendar system. Shaping the way on how to dispense calendar reckoning education away from the traditional and often considered mysterious ways to a scientific, obvious and comprehensible method.

Informant #V believes organizing colleges and educational centers in the Ethiopian Orthodox church will prompt the resurrection of traditional church education, including church calendar. The Ethiopian Orthodox church should practice adjusting fair payment for those who have graduated from all the traditional Church schools. At the moment, the deacon, who never joined traditional church education is with better salary than those who spent several years in traditional church schools. This unfair treatment will permanently eradicate traditional church education from the church. In my suggestion, that The Holy Synod of the Ethiopian Orthodox Church should resolve it.

Universities and colleges in the country should include the Ethiopian calendar with their assorted section, as the Bahirdar University established Ge'ez department for the first time. The department in the higher education will not only set aside the subsidy of calendar, but also they will produce tangible, impartial and well-organized ideas about it. Higher education can also have a power of using scientific methods to produce various innovations, like medicine, proper agricultural practices and time management, astronomical innovations, as traditional schools moreover, monasteries, in global North converted to origin of scientific research centuries.

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B 20 IV-IS, “መርሃ ዕውር” ሐይቅ እስጢፋኖስ ገዳም፤ ደቡብ ወሎ ዞን

G1-IV-204. ባሕረ ሃሳብ፣ በመምህር ሰሊክ ከዓረብ ወደ ግዕዝ የተመለሰ፣ ሞጣ ጊዮርጊስ ቤተክርስቲያን፣ ምስራቅ ጎጃም ዞን.

AMHARIC BOOKS በአማርኛ የተጻፉ ዋቢ መጻሕፍት

ሃብተ ማርያም ወርቅነህ ሊቀ ሥልጣናት (፲፱፻፳፪ ዓ/ም), “ጥንታዊ የኢትዮጵያ ትምህርት፣” ብርሃንና ሰላም ቀ/ኃ/ሥላሴ ማተሚያ ቤት፣ አዲስ አበባ

ሃይማኖተ አበው(፲፱፻፹፮ ዓ/ም) ትንሣኤዘጉባኤ ማተሚያ ቤት፣ አዲስ አበባ ኢትዮጵያ፣

ኅሩይ ስሜ፣(2000ዓ/ም) ትክክለኛው የኢትዮጵያ ዘመን አቆጣጠር፣ አ.አ ኢትዮጵያ

መሠረት ስብሐት ለአብ (1981) “ትውፊታዊ ሃሳብ ዘመንና ታሪኩ” ገጽ 178. ኒው ላይፍ ሊትሬቸር ሊሚትድ. ሆንግ ኮንግ.

ማሞ ውድነህ፣(2005 ዓ/ም) “መጨው ጊዜ” ንግድ ማተሚያ ቤት፣ቤት፣ አዲስ አበባ ኢትዮጵያ፤.

ስንክሳር (፲፱፻፺፬ ዓ/ም) ትንሣኤ ዘጉባኤ ማተሚያ ድርጅት. አዲስ አበባ.

ተክለ ጻድቅ መኩሪያ(፲፱፻፶፩ ዓ/ም) “የኢትዮጵያ ታሪክ አክሱም ኑብያ ዛግዌ”፣ ገጽ ፲፩፣ ትንሣኤ ማተሚያ ቤት፣ አዲስ አበባ ኢትዮጵያ፤.

ተክለ ጻድቅ መኩርያ (፲፱፻፶ ዓ/ም) ከጣኦት አምልኮ ወደ ክርስትና፣ ትንሣኤ ዘጉባኤ ማተሚያ ድርጅት፣ አ. አ ኢትዮጵያ

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አስረስ የኔሰው(፲፱፻፶፩ ዓ/ም) “የካም መታሰቢያ” ኮከበ ጽባሕ ማተሚያ ቤት፣ አስመራ.

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Appendics

1. Abbervation

NKJV	New King Jems Virsion
EC	Ethiopian Calendar
Bh	Bähire ḥässab
TY	ṭənətyon
EOTC	The Ethiopian Orthodox Tewahido Church
ዓ/ም(ዓመተ ምህረት)	ämätä Məhərät (Year of Mercey)

2. Interview guide

I. Interview guide questions from related campaigner

1. How long have you been experienced studying Ethiopian calendar?
2. What was the Ethiopian calendar before Christianity?
3. Is there early document that designates calendaric practice in Ethiopia before Christianity?
4. Why most local and foreign media claim that the Ethiopian calendar is Julian ?
5. What quality can lead us to land to the idea that the current calendar is the Ethiopian, Julian, or Coptic?
6. How we could categorize the currently used calendar is Ethiopian, Julian, or Coptic?
7. There are two main calendars in the world. The first one is the Gregorian and the next one Julian. Ethiopians and most Orthodox denomination refused to follow the new Gregorian calendar. Is this due to religious divergence or the Gregorian calendar itself was stanch error?
8. Most countries in the world follow the Gregorian calendar. What is the reason behind this?
9. It is trends in Ethiopian Orthodox church to boost the acceptance of religious laws and stimulating new religious innovation with revelation from Angles, and God. For example, the Anaphora of St. Mary seems the work of Ethiopian clergies. However, it given to *Abba* Ḥərəyaqos (Cyriacus) of Bəhənsa. ²²³Certain persons suppose it is the indistinguishable way in calendar. What is your stance?

²²³Mebratu(2012) mentioned in his thesis "LITURGICAL COSMOLOGY:" Aanaphora of Mary, said to be composed by *Abba* Ḥərəyaqos (Cyriacus) of Bəhənsa;page 15

II. Interview guide questions from Coptic Church agent

1. Did you have a part on instructing and probing Coptic Church calendar?
2. It assumed that the Egyptian pharos and the Roman Caesars were influential on Coptic calendar. However, there is another source that indicates Caesar Augustus shaped the Julian calendar as a result of the advice from Greek philosophers. How we reconcile these two skirts?
3. What was the Ethiopian calendar before Christianity became ascendancy religion? It is arguable that pre-Christianity Ethiopians were followers of Pharonic calendar. Is there any evidence that support this?
4. St. Demetrius believed as the one who shape the movable feasts and fasting. Whereas, his work exceedingly depending on Jewish calendar rather than Pharonic. For example the Jewish New Year.(Matiqe) which used as the base to calculate the Lent time and Easter. As Jewish dominance on the work of St. Demetrius displayed, is it correct to say that the Coptic calendar is Pharonic?
5. The Ethiopic and Coptic calendars sometimes look like un-identical. For instance, seasons in Ethiopia are four,(summer, winter, autumn and spring). In the case of Coptic, flooding, planting, and harvesting. Could you describe the ground of the distinction?
6. St. Demetrius and Abushakir are the famous calendar scholars in Ethiopian Orthodox church. Since St. Demetrius is the founder of Movable feasts and fasting days, what was the supplementary effort of Abushakir?
8. It said that the Julian and Pharonic characters were significant on Coptic calendar. If it so what was the Coptic Church contribution in Coptic calendar?
9. Could you summarize the main concept about Coptic calendar?

III. Interview guide questions from the Ethiopian Orthodox Church clergy

1. Do you have a part in instruction and giving training on calendar or related issues?
2. It believed as St. Demetrious only twisted the days of movable fasting and feasts. If you agree in this, Who is the author of the rest calendaric rules?
3. Do you believe that all reckoning arrangement of Ethiopian Orthodox Church calendar is Coptic? If your answer is NO what is Coptic and What are Ethiopic and the others?
4. Why Abushaker became more famous than pope Demetrious in the eyes of the Ethiopian Orthodox church scholars?
5. It said that there is a bond between calendaric education with magical matters, astrology, and superstition in traditional church schools. If it is true what are acceptable in the church and what are prohibited?
6. Currently, the calendar schools are completely collapsed in Ethiopia. Although, it is the same in all traditional church education, calendar intellectuals and learners are leaving from evacuated schools. What measures should be taken to prevent this?
7. What steps should acquire to maintain the elimination of church calendar?

3. Declaration

I CERTIFY THAT THIS WORK, SUBMITTED IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF AFRICA STUDIES IN THE DEPARTMENT OF AFRICAN AND ORIENTAL STUDIES HAS NOT BEEN SUBMITTED FOR A DEGREE OF MA AT ANY OTHER COLLEGE, AND THAT IS ENTIRELY MY OWN WORK. I AGREE THAT THE LIBRARY MAY LEND/ COPY THE THESIS UPON REQUEST.

NAME YOHANNES WORKU (ABBA)

SIGNATURE -----

DATE -----

THIS THEISIS HAS BEEN SUBMITTED FOR EXAMINATION WITH MY APPROVAL AS UNIVERSITY ADVISER.

CONFIRMED BY THE ADVISER:

NAME GETHACHEW S/ MARIAM (PHD)

SIGNATURE -----

DATE -----

4. Respondents Background

No.	Code	Position	Qualification	Experience	Date of interview	Place of interview
1	Informant # I Fr, Dr Angelose Naqada	Coptic Church representative in Addis.	PhD in Egyptology	18 years	May 14 2016	St. Mary Church chapel, Amist Killo
2	Informant # II Dr Joachim Gregor Persoon	Associate Pro.at Shcool of Art. AAU.	Phd Study of Religion	9 years	April 24 2016	Five zone Café Amist Killo.
3	Informant # III Mämöhär Fəqərə Yohännəs	Abbot of the Monastery	Instructor from the traditional Biblical School of EOTC	27 years	April 25 2016	Haik Estefanose Monastery.
4	Informant #IV Mämöhär Mekonnen Workineh	Instructor in the Holy Trinity Theological College	MA on Church History and linguistic.	17 years of instructing church history	March 27 2016	The Holy Trinity Theological college chapple.
5	Informant #V Qäsisə Dr Mikərə šəlasə Gäbrä Mika'el	Hefty	Phd in theology	27 years of instructing church history	April 21 st 2016	Mere Cms, Ayat
6	Informant #VI Dr Bälätä Bərəhane	Chair Person of Hydrology, Hydraulics and Water Resources system	Phd in Civil And inviromental engineering	12 years in studying church history	April 29 2016	AAU Institut of Technology.



Monk counting his shadow feet to compute time in the monastery of Hayqə 'Estefanos. May 18 2016



Märəha 'Ewər Parchment book preserved in Hayqə 'estefanos Monastery. Taken on May 20 2016