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Astronomical Calendar of the Oromoo - Living Style in Space and Time: Facts and Historical Issues

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Abstract

The Oromoo people constitute the largest ethnic group in Ethiopia, and belong to the Cushitic family. Their original homeland, Oromia, included most of what is now the Ethiopian Empire and stretched into northern Kenya and Somali, where some Oromoo still live. As sources indicate, customarily, their living style: philosophical view, belief, physical existence and phenomena (perception, analysis and future prediction) are all customarily linked to events they observe in cosmos. A concisely established witness is the Booranaa calendar. It is so claimed as an accurate complex astronomical calendar of ancient Cushites by the scientific community. The historical discovery of this calendar is supported from a broad range of disciplines, like Anthropological, Astronomical, Physical studies (radioactive dating) traced from the pillars at Namouratuna where the Booranaas, or otherwise, the "Kushs" had built around 300 B.C as the drawings on the pillars confirm to whom the property stands for. Its identity representation to all Oromoo does not raise question. However, whether it is customary or not across all the Oromoo is worth to bring into discussion. In fact, there are similar pillars preserved in some regions of Oromia and else around as well as event telling practices by Oromoo elders across most of Oromia. It needs to be worked out and is widely open to research. This noble scientific based life style needs attention by the current generation to promote, work on it, document and hand it over to the next generation. In this article, the author first tries to provide detailed scientific, astronomical-physical review and analysis of the Booranaa calendar. Secondly, he tries to articulate further research initiatives of the Oromoo space-time conceptual, astrophysical/cosmological living style perspectives. Finally, the author presents comments and concluding remarks.

***Keywords**: Oromoo, Booranaa calendar, space-time, culture - living style, astronomy*

Axereeraa

Uummanni Oromoo saboota Itoophiyaa keessa jiran keessa saba danuu yoo ta'u maatii hortee Kuush keessatti ramadama. Lafti isaanii ganamaa irra jireessa empaayera Itoophiyaa qabatee hanga kaaba Keeniyaafi Somaaliyaa har'aatti bal'ata. Barruuwwaniifi qorannooleen akkuma agarsiisan, akkaataan jireenya uummata Oromoo, ilaalchi, falaasamni, jiruun akkasumas argaa-yaada (mil'uu, xinxallii fi raagni) isaani hubannoo taatewwan uumamaa irratti hundaa'a. Kanaaf ragaan qabatamaa dhaha Oromoo Booranaati. Dhaha durii keessaa kan Booranaa dhaha astroonomii irratti hundaa'e sirriifi hubannoo gadi-fageenyaa barbaadu akka tahe saayintistoonni ragaa bahu. Seenaan argama isaa qorattoota gosa beekumsa adda addaatiin deeggarama. Kunneenis qorannoo xinaadaa (antroopolojii), astroonomii fi arkiyoolojii (tilmaama umrii) utubaa dhakaalee Namouratuna, bakka Booranni yookaan Kuush baroota 300 Dh.K.D ijaare irratti

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taasifaman yoo tahan, fakkiifi bocaawwan irratti mul'atan waa'ee abbumaa isaaniitiif ragaa guddaadha. Kanumarratti hundaa'uun calaqqeen eenyummaa achirratti mul'tan kan Oromoo ta'uu waan gaaffii keessa galu mit. Kun garuu Oromoo hunda biratti akkanatti hubatamuufi dhiisuun yaada xiyyeeffannoo barbaadudha. Utubaaleen dhagaa akkanaa Oromiyaa bakka gara garaa keessatti ni argamu, kanumaan walqabatee seenessi taateewwan garagaraa manguddoota Oromoo kennan hedduudha. Sirni jireenyaa saayinsii hundeeffate kunis waan irratti hojjetamuu maluufi dhimma qorannoo jabaa tahuu maludha. Barruu kana keessatti, barreesichi jalqabarra waa'ee sakatta'a barreeffamoota saayinsii fi astroonomii dhaha Booranaa irratti taasifaman dhiyeessa. Itti aansuuddhaan, dhimma yayyaba yeroo Oromoo irratti qorannoolee gara fuulduraatti hojjetamuu malan aggaama. Dhumarrattis yaada gudufaa tahan kaasa

Jechoota Ijoo- *Oromoo, Dhaha Booranaa, bakka fi yeroo, aadaa, akkaataa jireenyaa, astroonomii*

1. Introduction

The Oromoo is an indigenous family of East African Cushitic people currently inhabiting most of Ethiopia, and other significant number of them live in Kenya and Somalia. Presently, they are the largest group in number among the Cushites of East Africa. They speak the Oromo language (Afaan Oromoo), the third largest language (next to Arabic and Hausa) spoken in Africa (Ta'a, 2006). Historically, the Oromos are recognized with ancient prehistory of inventing a complex astronomical calendar about 2300 years ago (Bassi, 1988; Laurance R. Doyle & Wilcox., 1986; A Legesse, 1973; Lynch & Robbins, 1978; Paul, 1979; Robbins, 2006; Soper, 1982) as well as the references therein. The Gadaa System, inscribed under UNESCO as Intangible World Heritage and recognized as a democratic socio-political system of ancient time, is the identification of the Oromoo governing principles (UNESCO, 2016). Actually, Gadaa is developed, evolved and inherited and involves the whole governing principle of both nature and social affairs of the Oromoo (Baissa, 2004; Jalata, 2012b; A Legesse, 1973; Asmarom Legesse, 2006; Tesfaye, 2012). Evidences from various disciplines attest that the Oromoo indigenous knowledge, world view, belief, physical existence and phenomena (perception, analysis and future prediction) are all customarily linked to events they observe in cosmos(Isenberg, Krapf, & MacQueen, 1843; Megeresa, 2005).

A concisely established witness of the Oromoo observational view of lifestyle is the Booranaa astronomical calendar derived from night sky observation. Its identity representation to all Oromoo does not raise question. However, whether it is customary or not across all the Oromoo is worth to bring into discussion. In fact, there are similar pillars preserved in some regions of Oromia and else around whose purposes are not yet fully known. This by itself is widely open to research. On the other hand, there are event telling practices customarily induced or deduced from occurrences of natural phenomena by Oromoo elders across most of Oromia. This inherent scientific based lifestyle needs attention to promote, work out, document and hand it over to the next generation.

The first objective of this article is to provide detailed scientific astronomical-physical review and analysis of the Oromoo calendar in particular the already celebrated Booranaa (Oromoo-Cushitic) calendar derived from the Namoratunga II ethno-archeological site around Lake Turkana, Kenya. The rationale behind is that, though the calendar is well established as an astronomical calendar by astronomers (Doyle & Wilcox., 1986), it has remained to debate among archeologists and anthropologists(A Legesse, 1973; Lynch & Robbins, 1978; Soper, 1982; Turton & Ruggles, 1978). And, on the other hand, it has transpired speculations by historians (Hassen, 1992), sociologists and amateur scholars in the analysis, interpretation and its implication in historical construction and description of the Oromoo. Here it is important to note that, while the philosophical lifestyle of a community is peculiar to that

societal background setup, etc., it is also affected by local and global interfaces that need a pool of social and natural field of studies. Hence, one has to be aware of the difficulties of connecting the philosophical part of Oromoo world outlook (cosmos perception) by way of cyclic events to that of the laws of physics. This abstract thinking of Oromoo world outlook by way of cyclic eventful formulation in describing the physical world by itself (more observed by the Gadaa system) is an issue[a]. Actually, correlating the astronomical calendar to the cycles of Gadaa system is an intricate task. The scientific astronomical calendar is already in use within the Gadaa system that incorporates the cosmos perception of the Oromoo. With this precaution, under this objective the author focuses on reviewing and analyzing the Booranaa calendar based on the existing literature reviews from the pure physical principles and laws of nature. Then, he provides supplementary and enriching views, analysis and also comment on some elements that need further work.

Secondly, and in connection with the first objective, the article is intended to initiate further exploration into the Oromoo calendar elsewhere. As such, whether the Oromoo calendrical system is uniformly used across or in differences due to spatial and temporal factors need to be worked and thereby the results need to be evidenced to enrich the construction of the life style of the society.

Thirdly the article deliberates on how Booranaa calendar is correlated to the Gadaa cycle of the Oromoo so that the discussions become an initiative for further research. Finally, the author tries to articulate further research initiatives of the Oromoo living style perspectives from cultural knowledge of nature (Oromoo space-time concept, astrophysical/cosmological perception, religious views, etc) to trace history and cultural assets of the people.

2. Literature Review

The Oromoo Calendar

Prior to the anthropological work of Legesse in the early 1970's, ethnographic literature scholars were interpreting the Oromoo calendrical system as solar calendar. Consequently, the scholars were attempting to explain superficially that the Oromoo "attach magical significance to the stars and numbers" (Haberland, 1963). However, the first astronomical detail outlined by Legesse has shown that the Oromoo colander is astronomical. In fact, it is a lunar-stellar astronomical calendar as archaeo-astronomical works have proved so. As Legesse describes, the calendar is cyclical similar to those of the Mayans, Chinese, and Hindu, but unique in that it ignores the sun completely (except indirectly by way of the phases of the moon). The mechanisms of the observation were described to him by the Booranaa Ayyaantuus[b] within the locality where he had conducted the field work, the Booranaa region –Southern Ethiopia. According to Legesse's finding the days are cyclic in a month. There are twelve months in a year, but no weeks. Each month is being identifiable with a unique (once a year) astronomical observation by the Ayyaantuus. The length of each month is either 29 or 30 days – the time it takes the moon to go through all its phases. There are 27 day names. Since each month is 29 or 30 days long, there is a shortage of two to three days early in the same month. But the Booranaa recycle the name of the days so that for day

[a] The Oromoo world outlook is adopted by formulation of events they observe cyclically. This cultural world outlook is most reflected and observed by the Gada system. For more refer the work of (Megersa, 2005; Megersa & Aneesa, 2004).

[b] Ayyantus are people among the Oromoo who are culturally specialized in informing events like time reckoning. Here, the definition is too limited to observation (only), while it is understood in wide range of issues by the Oromoo.

28 the first day's name is used again, the second day's name for day 29, and start of the next month using the third day's name and so on. Thus each month will start on a different day name. Whether the particular month is to be 29 or 30 days long would depend on the astronomical observations of the seven Booranaa stars (refer table 1 for the names) being in conjunction with the rising of the moon.

On the other hand, in the later part of the 1970's Lynch and Robbins in their archeological field work around Lake Turkana - Northwestern Kenya sites- came with what they believed was the first archaeo-astronomical site ever found in sub-Saharan Africa. The Namoratunga II archeological site consisted of 19 basalt pillars arranged in rows forming a suggestive pattern. The site is dated at approximately 300 B.C., as archeologists have taken sightings on seven prominent stars, seven Booranaa stars earlier reported by Legesse, as they would have appeared during this period. Due to precession (the slow, wobbling of the pointing direction of the rotation axis of the Earth), the stars will seem to move from their positions over the centuries, although the moon's position would not vary on this time scale. The archeologists did suggest that the archaeo-astronomical information described for Namoratunga II is an accurate and complex calendrical system. Then, the archeologists come to conclude that astronomical calendar was developed by the first millennium B.C. in eastern Africa. Furthermore, they did comment on its significance in evidencing to attest the complexity of prehistoric cultural developments in sub - Saharan Africa.

In response to this archaeo-astronomical report, in 1982 a number of significant questions arose concerning the site, the calendar, and archaeo-astronomy of East Africa in general. The pillars were re-measured by an anthropologist (Soper, 1982) and found to be magnetic in nature. The original measurements had to be modified but, again, alignments with the seven Booranaa stars were found. So, this brought up the question whether the pillar alignments are significant at all, since the Booranaa Ayyaantuus certainly using the calendar as reported by Legesse.

In 1986, (Laurance R. Doyle & Wilcox., 1986) did reinterpret on the archaeo-astronomical finding of the calendar in response to the quests and debates. Their astronomical analysis, concludes that the pillars found in northwestern Kenya by Lynch and Robbins and preliminary dated at 300 BC could, as they suggest, represent a site used to derive the Booranaa calendar. Further, they did outline that the Booranaa calendrical system as described by Legesse works subjected to certain astronomical constraints (astronomical constraints described in their article). The calendar does not work in right-ascension, but does work if taken as based on declination. Moreover, (Laurance Reeve Doyle, 1985; Laurence Reeve Doyle, 1984) suggests that some significant anthropological results can be drawn from the astronomical derivation of this calendrical system. Then, he comments that the calendar would have been invented (to use the stars correctly) sometime within a few hundred years of 300 BC, a time when the Cushitic peoples were dominant in this part of the world. Accordingly, Doyle heroically calls it the Booranaa-Cushitic calendar.

On the other hand, (Bassi, 1988) discusses and comments on the understanding of the procedures of establishing a particular conjunction how the people are using the calendar without any discrepancy. He comments that Legesse's work misses intercalation of months and another Booranaa star (that means Booranaa stars are eight instead of seven). He also further discusses that the Booranaa calendar works accurately with the solar cycle with adjusting principal observation of the lunar-stellar conjunction. The calendrical system practically works on the basis of right ascension of stars and constellations, but not of their

declination. His report is based on the knowledge of Bante Abbagalan, an Ayyaantuu of the Booranaa.

3. Methods and Materials

The methodology is a mixed approach of descriptive analysis of the review works; and comments and supplementary enriching additional works. The steps are:

1) Review on the Oromoo calendar from research articles addressing the main issues therein the references (earlier section).
2) Supplementary and complementary comments to the revised materials.
3) Invoke possibly researchable issues of the Oromoo living style in space and time to trace the assets and histories of the people from observational point of view.

4. Results and Discussions

4.1. Comments

The Oromoo (Booranaa-Cushitic) astronomical calendar derived from the Namoratunga II archeological site around Lake Turkana, Kenya is the result of an indigenous knowledge of ancient Oromoo at least dated back to 300 BC. This indigenous knowledge is a pure scientific knowledge derived from observation of nature (here astrophysical observation of night sky). The uniqueness of this calendar is its accuracy in the past and cultural continuity by the current Boorana Ayyaantuus. Though, there is lack of critical anthropological work in other places (outside Booranaa region), certainly there were specialized Ayyaantuus in the calendar within the 20th century among the people. For example, in west central Ethiopia, West Showa zone (Oromia regional administrative state) at Oda Gudaya the calendar was within the Gadaa system derived from star observation by the local Ayyantus called Warra Abba Odo[c]. Futtasa Bujjo who deceased around 1960 was the last Ayyaantuu of this family still within the memory of many old age people in that locality.

Moreover, the Oromoo astronomical calendar derived from the Namoratunga II archeological site rules out the idea perceived by some historians including (Hassen, 1992) that the Oromoo calendar has evolved from the Muslim or Christian calendrical system. Since, chronologically the Oromoo calendar precedes both, at least by 300 years to the modern Christian calendar and more to that of Muslim's. Also, their philosophical approaches of derivation are entirely different. The Oromoo calendar is based on observation of stellar-lunar system while the other two are based on Solar (Christian) and Lunar (Muslim) relative motions in the sky. Regardless of this comment, I would like to thank Prof. Mohammed Hassen for his great work in writing and constructing the history of Oromoo people.

On the other hand, it is important to remark on the confusions arising from other literatures that the Oromoo calendar is derived from the relative motion of stars, moon and the sun in the sky. This is somewhat, confusing unless otherwise it is carefully considered in the context of (Bassi, 1988). However, I suggest that the confusion arises in the cycles of the 27 days. Actually, these 27 day cycles are astrophysically related to solar activities, not related to the relative motion of the sun with respect to the earth (earth's revolution about the sun). So this

[c] Oda Gudayya is a Gada center located in Bako-Tibe local district of West Showa zone. The center services three neighbouring districts: Bako-Tibe, Chaliya (West Showa) and Jimma-Rare in Horo-Guduru (Wallaga, Oromia) .
Information is gathered by the author. Fortunately, the author was born and grown up near this locality (about 10-15km). More information is supplied by the grandson of Futtasa, Gaddisa Waktola.

is open to research. Additionally, attempting to derive the calendar from the more general abstract thinking of Oromoo world outlook by way of cyclic eventful formulation that will pool a number of issues like philosophy, religion affairs, etc together is a complicated task. Eventually this leads to little conclusion.

However, it is important to remark Doyle's suggestion that the Oromoo calendar will be used to draw some anthropological results in the study of the East African Cushites. On the other hand, it has great importance in the construction and extraction of Oromoo history that mostly lacks written documentation. Here, it is suggestive to hypothesis that the ancient Oromoo would have developed a lifestyle based on observation of nature and its principles. Accordingly, in the next sub-section we propose some research frame that methodologically will use the Oromoo indigenous observational knowledge of nature to construct/extract their living style in space-and-time. In effect, this will further initiate new methodological paraphernalia in tracing relevant anthropological results.

Generally, the archaeo-astronomical site found in sub-Saharan Africa, Namoratunga II is ended considered to be an ancient observatory of Cushites being built for the use of Oromoo calendrical system. The calendar is purely astronomical where the observation of relative motion of stellar system in the sky is its base. This noble work of anthropologists, archeologists and astronomers in consultation with the Ayyaantuus on this historical and currently working system is outstanding. Its implication is so vital to study the prehistory of the community and social construction. On one way, it is useful to communicate, derive and construct/extract the history of the society. And on the other hand, it is useful to derive the indigenous assets of the society to build the society.

Finally, it is important to consider the following comments and corrections to the mainstream review literatures, whereupon this article has focused concerning the calendar:

1. In Legesse's conclusion that the Booranaa calendar ignores solar seasons shall be reconsidered or to be checked. On one way Marco's field report claims that solar seasons are incorporated by the calendar through intercalary months. On the other hand it seems to avoid the whole idea of his classical Gadaa system which cycles every 8 years relevant to solar calendar (According to Legesse the calendar and the Gadaa system are inseparable).

   On the other hand, here we show that the calendar fits with 8-years cycle as framed in table 2. But it works exactly in 9 cycles, about 8 – and – half solar years. The table is generated based on the pure lunar – stellar conjunction cycle with 354 days of the year where the 27 names of the days are numerically represented as: 1, 2, 3,…,27, then cycle according to the proposed system giving months 29 or 30 alternatively. If one tempts to bring ideas like the half year is Gadaa transition period for handing and overtaking to the governing body it seems fine. But this needs critical research by itself. Another temptation is to link it to *Salgan-Booranaa* (the nine Booranaas) or other Oromoo cyclical event recognitions, which seems at the moment any description to be worked out.

2. Though, there is no scientific or logical discrepancy, there is a miss understanding in the names of the seven Booranaa stars and the months by Doyle and Wilcox. The correct ones are read as in Legesse or Marco as in table 1.

3. Marco's work reveals the freedom of having alternative stars in Booranaa calendrical system. This should be taken in to consideration for further research work. It is known that the Oromoo people in general practice sky observation to tell and arrange events.

Accordingly one will expect probably different stars or stellars including names be used by the Oromoo separated in space and time without losing ground of the common indigenous knowledge they possess.

4.2.Issues to be addressed and Remarks

The work of Legesse (A Legesse, 1973) compiled and fully described in his book at least shows the indigenous knowledge of the Oromoo people observed in their living style (in real time). Actually in reference to this classical book, the ethno-archeological work of Lynch and Robbins (Lynch & Robbins, 1978) further tells us that the Oromoo people are the indigenous African Cushites who have at least lived more than 2300 (300BC) back from now where they are also living still today.

This ethno-archeological discovery in agreement with the anthropological work of (A Legesse, 1973) reveals the advent of this indigenous people's complex astronomical calendar. It is a pure scientific living style based on real physical observation of world view. The people also have lived with complex knowledge bringing their observation and experience to build and construct principles of future control and management system both for natural and social affairs – the Gadaa System. In fact, it is the Gadaa system that shows the link between the ancient Oromoo indigenous and present modern Oromoo living style and system of knowledge. Time reckoning based on astronomical observation by the Ayyaantuus is used within the Gadaa system for calendrical purpose. The Ayyaantuus were the living people among the Oromoo whom the anthropologists, the archeologists and the astronomers consulted during their field work for their findings. As the findings are acknowledged as noble discovery to the researchers, there is no reason to dismiss acknowledging the historical owner of the people including their preservation to the generation of the whole world. Here, it is also important to remark a provocative idea for further enriching of the people's indigenous cultural preservation to be searched out that, how the two complex world views of the Oromoo: the astronomical calendar and the Gadaa systems are closely interlinked to each other.

While, the anthropological and archaeo-astronomical findings of the aforementioned evidences show that the people have discovered a complex astronomical calendar and using it still today, there are also evidences from different disciplines that the people's indigenous knowledge of world view: philosophical view, belief, physical existence and phenomena (perception, analysis and future prediction) are all customarily linked to events they observe in cosmos. For example, comments from strangers like travelers, foreign expediters, missionaries and traders observations project that the Oromoos (whom) they had met in general were considered as gentle, open minded, good at instructions and very conscious of reading someone's opinions, for example(Isenberg et al., 1843)as viewed from social outlook. Though it is not conclusive, it is not least to extract from these and similar scholars that traditionally the Oromoo social life style appears to depend on tracing the knowledge of the experience they have acquired from their exposures.

The implemented review raises some key issues that needs to be addressed in future research:

1. While the Oromoo society in the prehistory, before 300BC were known with such advanced knowledge in constructing Astronomical Observatory for calendrical system, including patenting of ownership, their place of dwelling, etc., where is the continuity of such generation?
2. Though, the above question is relevant, the 16th century Oromoo movement in reconstructing of governing system as seen in the well-constructed Gadaa system

seems to show the society's indigenous knowledge continuity and progress. Also they remain of using the calendar they did discover accurately by the people as the archaeo-astronomical findings implied. So the question is where are the other documents that smoothly fit the past and the sixteenth century (relatively) advanced complex indigenous society value assets?

3. Why the documents produced during and after the sixteenth century about the Oromoo people are so hostile? What are the factors?

   In the very beginning building on certain foundation and constructing the whole system are different. In fact physical buildings as well as developing science based on natural principles are not as difficult and complex as that of social history construction. It is very difficult and complicated if once it is distorted or lacks genuine reflection. The effect will be a long lasting where the consequence is an obvious crisis to a state of confusion to the fellow generation. As such, it is not difficult to learn in reviewing the existing records of Oromoo history where much of them are confusing. Some of (not few) the fanatic, fictitious, manufactured, etc documents are all good of entertaining had they been produced for fiction purpose provided a virtual subject is used instead of Oromoo. Some documents seems perpetually produced for fencing the reality out of reach with full of religious and socio-economic politics as a tool. The worst of these series is their state of determinism for both the origin and homeland of the Oromoo contrary to what the Oromoos say about themselves.

4. Based on the raised questions as in the above, what is the present generation supposed to do?

   As a remark, what (Jalata, 2012a) comments is relevant. Understanding Oromoo civilization requires studying the historical, cultural, political, philosophical, religious, linguistic, and geographical foundations of Oromoo society. This endeavor can unquestionably leads to the answers. But to arrive at that deliberating over the way, and creating relevant conditions are very important to consider.

4.3. Some Research Initiatives

1. Studying, searching, clearing confusions and reconstructing Oromoo indigenous knowledge as viewed from Observational point of view: Physical, philosophical, religious, and social angles is pertinent. Meanwhile, considering research on Oromoo culture, history and archaeology is as important as it is supportive.
2. Further research on Oromoo calendar and developing and establishing practical (officiating, academic) use of the calendar is also relevant.
3. Conducting research to resolve whether the Gadaa cycle is related to the Oromoo calendar or not is important.
4. Finally, as a puzzle I introduce a simple drawing around the Booranaa stars in the form of figure as displayed in fig. 1.

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Tables and Ffigures

Table 1: Names of Booranaa Stars

No.	Stars Name by the authors			
	Legesse (1973)	Doyle & Wilcox(1986)	Marco(1988)	Standard Astronomical name
1	Lami	Bittottessa	Lami	Triangulum
2	Busan	Camsa	Busan	Pleiads
3	Bakkalcha	Bufa	Baqqalcha Sors	Aldebarran
4	Algajima	Wacabajjii	Baqqalcha Algajim Algajima	Belletrix
5	Arb gaddu	Arb gaddu	Baqqalcha Arb gaddu	Central Orion
6	Urji Walla	Obora Gudda	Baqqalcha Walla	Saiph
7	Basa	Obora Dikkaa.	Baqqalcha Basa Guddo	Sirius
8	-	-	Baqqalcha Basa Diqqo	Beteleguse

Table 2: Booranaa calendrical system to cycle in 8 or 9 years?

1st day	2nd day	..	27th day	28th day	29th day	30th day	
1	2	...	27	1	2	0	
3	4	...			4	5	
6	...						
8	...					10	
11	.						
13	.					15	I Year
16	.						
18						20	
21							
23						25	
26							After this the same pattern repea
1						3	
4						8	
.						.	
.						.	
.						.	II Year
4						6	
.						.	
.						.	
.						.	
25							
.						2	
.						.	IX Year
.						.	
25						27	

Fig. 1: The Booranaa Stars: In the left panel the 8 - Booranaa stars are circled with yellow ink. In the right panel the stars are red spotted.