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Timekeeping at Akhet Khufu

Amelia Carolina Sparavigna

Politecnico di Torino, Turin, Italy

amelia.sparavigna @polito.it

The discovery of the Diary of Merer (papyrus Jarf) allows us to see the Egyptian calendar applied in a logbook. The diary is dated to the 26th year of reign of Khufu and describes Merer and his crew transporting the limestone blocks from the Tura quarries to Akhet Khufu, that is, the pyramid of Khufu (Old Kingdom). We find a calendar with 30 days in a month, and Merer's job adapted to the seasons of the year. The overall impression is that of extreme modernity in ancient Egypt.

In 2022, in an article entitled “Keeping time at Stonehenge”, Timothy Darvill proposed that a solar calendar, with thirty days in a month, was embodied into the erection of the Sarsen structures of the monument. “Recent remodelling of the developmental sequence at Stonehenge shows that the three sarsen structures—the Trilithons, Sarsen Circle and the Station Stone Rectangle—all belong to Stage 2 and were set up during the period 2620–2480 BC” (Darvill 2022, Darvill et al., 2012: Darvill, 2016). Therefore, the embodiment of a calendar happened around 2620-2480 BC. Darvill is also mentioning ancient Egypt: “External influences [at Stonehenge] may also be possible, ... During the early third millennium BC, ... increased interest in solar deities, such as the cult of Ra (Quirke, 2001), led to the development in Egypt of a 365-day solar calendar, known as the Civil Calendar. The origins, development and form of the Egyptian Civil Calendar have been described in detail by Nilsson (Nilsson, 1920) and Stern (Stern, 2012)” (Darvill, 2022).

Darvill's words are stimulating a comparison of 'keeping time' in Egypt and its Civil Calendar of 30 days in a month. Actually, 30-days-months are coming from the time it takes the Moon to pass through all its phases (it takes about 29,5 days). As told by Spalinger, 2018, the fact “that the Egyptian civil months were based upon earlier lunar ones is easy to see”; moreover, “each civil month has a name as well as a number” (Spalinger, 2018). The supposed irregularities of a previous lunar calendar led to the Civil Calendar, consisting of three “seasons” of 4 months of 30 days. At the end of the year, 5 extra days (called “epagomenal”) were added. About the link of the calendar with the Nile flood and the heliacal rising of Sirius, see please the detailed discussion in Depuydt, 1997.

Then, let us move to Egypt, in the same period when the Sarsen structures at Stonehenge started to be developed. We find the building of the Great Pyramid of Giza, Akhet Khufu, the magnificent monument to pharaoh Khufu, of the Fourth Dynasty of the Old Kingdom. Akhet Khufu was built circa 2600 BC, over a period of about 26 years (Tallet, 2017). We know the name of the pyramid from ancient texts. Specifically, we know the name of Akhet Khufu from the [world's oldest papyrus](#) (in it Akhet is written with the crested ibis sign). The papyrus, one of the Red Sea papyri, was discovered at Wadi al-Jarf on the Red Sea coast of Egypt, 119 km south of Suez. The site hosted the oldest known artificial harbor in the world.

“Astonishingly, the [Red Sea] papyri were written by men who participated in the building of the Great Pyramid, the tomb of the Pharaoh Khufu, the first and largest of the three colossal pyramids at Giza just outside modern Cairo. Among the papyri was the journal of a previously unknown official named Merer, who led a crew of some 200 men who traveled from one end of Egypt to the other picking up and delivering goods of one kind or another. Merer, who accounted for his time in half-day increments, mentions stopping at Tura, a town along the Nile famous for its limestone quarry, filling his boat with stone and taking it up the Nile River to Giza” (Stille, 2015).

About the word Akhet (of Khufu), rendered with the ibis sign, see please the [cover](#) of the book by Pierre Tallet, 2017, of the Diary of Merer. “The text, written with (hieratic) hieroglyphs, mostly consists of lists of the daily activities of Merer and his crew. The best-preserved sections (Papyrus Jarf A and B) document the transportation of white limestone blocks from the Tura quarries to Giza by boat” ([Wikipedia](#) and references therein). “Buried in front of man-made caves that served to store the boats at Wadi al-Jarf on the Red Sea coast, the papyri were found and excavated in 2013 by a French mission under the direction of archaeologists Pierre Tallet of Paris-Sorbonne University and Gregory Marouard. A popular account on the importance of this discovery was published by Pierre Tallet and Mark Lehner, calling the corpus "Red Sea scrolls" (an allusion to the Dead Sea Scrolls).” ([Wikipedia](#) and references therein).

“Though the [Merer’s] diary does not specify where the stones were to be used or for what purpose, given the diary may date to what is widely considered the very end of Khufu's reign, Tallet believes they were most likely for cladding the outside of the Great Pyramid. About every ten days, two or three round trips were done, shipping perhaps 30 blocks of 2–3 tonnes each, amounting to 200 blocks per month. About forty boatmen worked under him. The period covered in the papyri extends from July to November” ([Wikipedia](#) and references therein).

Once more, see please the papyrus: in the [image](#) after restoration we have Khufu in six cartouches (article in [The Past](#)). Note the crested ibis (column seven from the left) of Akhet Khufu. Now, let us consider the upper part of the papyrus, and count from right to left. We can easily see the numbers, 19, 20, 21, 22, 23, 24, and 25. These are the days of the month that we see in this papyrus. How many days had the month? 30.

Thanks to the excavations made by the Tallet and Marouard team we have the extraordinary possibility to observe ‘modern’ logistics in ancient Egypt, in the form of a report, directly from the hands of people that built the pyramids. We have the elegantly written papyri with the Egyptian Civil Calendar used to report the scheduled time of handling of stones.

Let us consider [Papyrus B](#) in depth.

[Day 25]: [Inspector Merer spends the day with his phyle [h]au[ling]? st[ones in Tura South]; spends the night at Tura South [Day 26]: Inspector Merer casts off with his phyle from Tura [South], loaded with stone, for Akhet-Khufu; spends the night at She-Khufu. Day 27: sets sail from She-Khufu, sails towards Akhet-Khufu, loaded with stone, spends the night at Akhet-Khufu. Day 28: casts off from Akhet-Khufu in the morning; sails upriver <towards> Tura South. Day 29: Inspector Merer spends the day with his phyle hauling stones in Tura South; spends the night at Tura South. Day 30: Inspector Merer spends the day with his phyle hauling stones in Tura South; spends the night at Tura South” (Tallet, 2017)

What is [She-Khufu](#)? ““She Khufu” means “the pool of Khufu”, short for “Ro-She Khufu”, the

“entrance to the pool of Khufu”, which is perhaps the headquarters for the administration of the pyramid project, situated on the artificial lake near the mortuary temple” (Roger Pearse, roger-pearse.com) And Tura-South? The southern caves of Tura. And the Nile? Or other waterways?

“On a summer afternoon around 4,600 years ago, near the end of the reign of the pharaoh Khufu, a boat crewed by some 40 workers headed downstream on the Nile toward the Giza Plateau. The vessel ..., was laden with large limestone blocks being transported from the Tura quarries on the eastern side of the Nile. Under the direction of their overseer, known as Inspector Merer, the team steered the boat west toward the plateau, passing through a gateway between a pair of raised mounds called the Ro-She Khufu, the Entrance to the Lake of Khufu. This lake was part of a network of artificial waterways and canals that had been dredged to allow boats to bring supplies right up to the plateau’s edge” (Weiss, 2022).

“As the boatmen approached their docking station, they could see Khufu’s Great Pyramid, called Akhet Khufu, or the Horizon of Khufu, soaring into the sky” (Weiss, 2022). Weiss is translating Akhet as ‘horizon’. This translation has been questioned (Creighton, 2014), that is, the use of the term ‘horizon’ is misleading.

“The logbooks cover the phyle’s activities for just over a year near the very end of Khufu’s tenure. In the summer months, roughly June to November, the workers operated in the vicinity of Giza. The beginning of this period was the first month of the inundation season, called Akhet, corresponding to the arrival of the annual Nile flood. The phyle’s first assignment appears to have involved transporting around 600 workers to the Ro-She Khufu. There, Tallet believes, based on references in the logbooks to “works related to the dike of Ro-She Khufu,” “the dam of the entrance of Khufu’s lake,” and the team “lifting the piles of the dike,” these workers opened the floodgates to fill the basins and canals that allowed goods to be delivered to the foot of the pyramid complex construction site” (Weiss, 2022). “With these waterways open, Merer’s men then spent several months hauling loads of fine limestone blocks from the Tura quarries to the Giza Plateau” (Weiss, 2022).

“In December, when the Nile flood had ebbed and transporting heavy loads by boat to the Giza Plateau was no longer feasible”, Merer and his crew were sent near two towns of the Nile Delta. The team was working at a facility structure for supporting “maritime expeditions to the Levant ... “At that time in history, the Egyptians were trying to connect as much as they could with the outer world,” says Tallet” (Weiss, 2022). “The papyri include no mention of the phyle’s activities from January through March, and Tallet believes this may have been a season when the workers could return home to spend time with their families. Starting in April, the phyle appears to have been working at Wadi el-Jarf” (Weiss, 2022).

And now, let us stress the importance of Merer’s Diary for the history of Egyptian calendar.

Merer used a calendar for sure, with 30 days in a month, was it the Civil Calendar?

Wikipedia: “The civil calendar was established at some early date in or before the Old Kingdom, with probable evidence of its use early in the reign of Shepseskaf (c. 2510 BC, Dynasty IV) and certain attestation during the reign of Neferirkare (mid-25th century BC, Dynasty V). It was probably based upon astronomical observations of Sirius whose reappearance in the sky closely corresponded to the average onset of the Nile flood through the 5th and 4th millennium BC. A recent development is the discovery that the 30-day month of the Mesopotamian calendar dates as late as the Jemdet Nasr Period (late 4th-millennium BC), a time Egyptian culture was borrowing various objects and cultural features

from the Fertile Crescent, leaving open the possibility that the main features of the calendar were borrowed in one direction or the other as well” (Wikipedia, 29 October 2024, and references therein).

Shepseskaf is mentioned by Spalinger, 2018. Let us remember that Spalinger consider the lunar origin of the 30-days months. The list of kings is (Wikipedia): Sneferu, 2613–2589 BC, Khufu, 2589–2566 BC, Djedefre, 2566–2558 BC, Khafre, 2558–2532 BC, Bikheris, c. 2532 BC, Menkaure, 2532–2503 BC ?, Shepseskaf, 2503–2496 BC ?, Djedefptah (Existence disputed), 2496-2494 BC?. Then, the Merer’s Diary is attesting the use of the Civil Calendar during the reign of Khufu, and therefore before the reign of Shepseskaf.

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