Excursus — On the Mysterious Egyptian Star Calendars

One half of the star calendar at the Roemer- und Pelizaeus-Museum

In this excursus I will be discussing the Egyptian star calendars which are also known as star clocks; I will focus primarily on the diagonal star clock that is located in the Roemer- und Pelizaeus-Museum in the German city of Hildesheim. Please note that all of the photos referred to in this chapter were taken by myself unless otherwise stated.

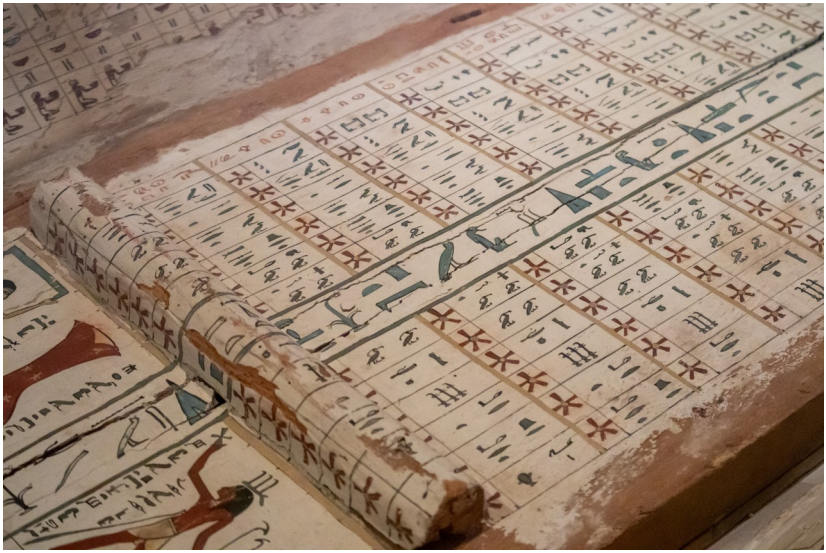
This excursus is intended mainly for those who are interested in Egyptian astronomy and date-keeping; reading this is thus in no way required to learn the basics of Egyptian hieroglyphic writing. I would also like to point out that the information presented herein is, in many cases, mere speculation. It seems that star clocks are not the focus of much research and thus, finding information about them is rather challenging. There do exist a number of books on these calendars, but they are quite difficult to come by (such as Christian Leitz' book "Altägyptische Sternuhren"). I was therefore required to use the information available to me online and at my local library. I am, however, fairly confident about understanding the basics of this star clock now.

I would like to start off by stating that the term "clock" may be slightly misleading since we generally think of clocks are something mechanical or electronic; but since these "clocks" have absolutely nothing mechanical or electronic about them, I prefer to use the term "star calendar", as they more closely resemble a modern-day calendar than they do a clock.

If you look at it for the first time, however, you may be wondering how this could have possibly been used as a calendar; after all, it does not look quite like the calendars we use today. In order to answer this, we will be looking at every single one of the important parts of this calendar and see how they connect in order to form a calendar.

Before we begin, you should firstly know that we will only be focussing on the middle section of the calendar, as the outer parts, for the most part, consist of offering formulæ to Anubis

and Osiris; and secondly, be aware that this calendar is read from right to left (for further information regarding this I would recommend re-reading the chapter “The Direction of Reading” starting on page 15).



Close-up of some of the rows

Let us begin by examining the calendar’s structure. As you can see in the picture, there are several rows (twenty-seven in total) of hieroglyphic writing, each one of which contains twelve columns with the name of a BAKTIU ( , *bꜣk.tj(w)*) inside of it. The name BAKTIU literally translates as “He who works”; the reason for this name will become clear later on. A BAKTIU is the equivalent of what we would call a “constellation”. Unlike our constellations, however, a number

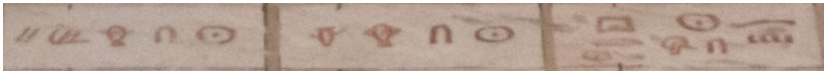
of them actually consisted only of one single star and there existed an entirety of thirty-six of these BAKTIU in total.

Let us return to the layout of the calendar. All of these aforementioned rows have a heading (written in red ink in the original photograph) which contain the name of the month and the week. One row is equivalent to one week of the Egyptian calendar and three of them are equal to an entire month. As an Egyptian week consisted of ten days, an entire row of twelve stars is actually equivalent to ten days and not twelve, as you may have believed at first. This, in return, means that an Egyptian month consisted of thirty days. However, this particular calendar is unusual in that it is actually incomplete; since there are merely twenty-seven visible rows — i.e. weeks — in this calendar, it only actually depicts about ⅔ of a year (270 days to be precise) and I have unfortunately been unable to find out why this is the case.

Let us now take a closer look at each of this calendar's components, starting with the headings. As mentioned previously, these contain the names of the month and of the week. The months do not actually have their own names and are marked simply with the name of the season as follows: once a new month begins, it is labelled as "The beginning of the first week of the beginning of the X-season" wherein the X is replaced by one of the three Egyptian seasons. The other months of a season are then simply labelled as "Second / Third / Fourth month of the X-season". The Egyptian seasons are, in order of occurrence: "AKHET" ( , *ꜣḫt*), "PERET" ( , *prt*) and "SHEMU" ( , *šmw*). AKHET literally translates to

"flooding" and generally lasted from July to November. The second season, PERET, literally translates as "Emergence" and it was the season during which you would plant your crops; it generally lasted from November to March. The last of the seasons, SHEMU, translates as "harvest" and it lasted from March to July.

The individual weeks of the month are labelled as "the middle week" and "the last week". Let us now look at an example: —



This picture depicts the fourth — and therefore last — month of the PERET season and its three weeks. The first part, "  " (*ꜣbd 4 hrw(.w) 10 tp(j) prt*) translates as "Fourth month, first week of PERET". The following two weeks are simply called "  " (*hrw(.w) 10 ḥr(j)-jb*) and "" (*hrw(.w) 10 ḥr(j)-pḥwj*) and translate as "middle week" and "last week" respectively.

I should point out that even though I use the word "week", this is actually not entirely accurate since the Egyptian week actually consisted not of seven but of ten days. The name for "week" in Egyptian is also simply "The ten days" ( , *hrw(.w) 10 tp(.j)*). So why, you may wonder once more, does each row consist of twelve columns and not ten? The answer is slightly more complicated. The columns do not actually refer to a particular day; instead, they refer to one of the thirty-six BAKTIU. As mentioned previously, the BAKTIU are the Ancient

Egyptian equivalent of what we would refer to as constellations but they do not actually correspond to our constellations; instead, the Ancient Egyptians had their own, unique set of star formations which have, for the most part, nothing in common with ours. These would rise consecutively in the sky at night and every ten days, a new one would appear and an old one would disappear thus marking the beginning of a new Egyptian week; hence, the twelve columns actually refer to the twelve hours of night-time and every hour, one of twelve BAKTIU would rise in the night sky. The first BAKTIU to rise is the one at the bottom of the row.

We will once more look at the fourth month of PERET, this time focussing not on the heading but the row underneath containing the BAKTIU (see image on page 76 for a more detailed view). As you can see, the BAKTIU at the bottom of the first first week (the row on the very right) is "  " (knmwt). This BAKTIU would have been the first to rise in the night sky during that week. If you take a look at the subsequent week, however, you can see that "  " is no longer the first to rise, instead having been replaced by "  " (*zꜣwj knmwt*). This is also the reason for this specific calendar being a *diagonal* star calendar, since the BAKTIU move diagonally up the table with each new week. You can see "  " (*spdt*) moving up diagonally across the calendar in this picture: —