

The Pyramid Complex of Userkaf

by

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1. Introduction

The pyramid complex of Userkaf is part of the necropolis of Saqqara, some 20 km south of Cairo. Its remains lie close to those of Djoser's Step Pyramid. In fact, when both complexes were still complete, Userkaf's was right alongside the north-eastern corner of Djoser's, with as little as 20 meters separating the two enclosure walls. To-day, it attracts little or no attention, and for understandable reasons: it's in a really ruinous state, the pyramid itself is inaccessible, and Djoser's adjacent complex offers all the tourist or interested lay person can hope to absorb. It does however have several interesting, even unique features – as we will see.

The site was for the first time (partially) excavated by Cecil M. Firth, in 1928-29. Jean-Philippe Lauer worked here intermittently between 1948 and 1955¹. Lauer and A. Labrousse again worked on the mortuary temple in 1976-78. Finally, Ali el-Khouli (Egypt Antiquities Organization) researched the site in 1982-85².

Sources are referred to with abbreviations in italics. The full titles of these are given in the Bibliography.

All plans and photographs are my own. The plans have been based largely on a plan in *Edw.Pyr.* (p. 177). In addition to this, I used a small plan in *Compl.* (p. 140) for the queen's pyramid, and for the interior of all three pyramids.

All photographs were made during a visit in February 2005.

A "clean" plan (without any arrows or the like) is also available on this website, as a separate file.

Transliterations are in the system of the Manuel de Codage.

1.1. Userkaf and his dynasty

Userkaf was the first king of the 5th dynasty. The Turin papyrus gives him a reign of 7 years, leaving out any additional months and days. Von Beckerath reckons with 8 years³.

Chance has preserved for us a mythical account of the origin of the 5th dynasty. It was one of the "tales of wonder" in the so-called Papyrus Westcar⁴. This papyrus dates from the Hyksos period, but the narrative could be older: possibly from the Middle Kingdom.

A magician called Djedi prophecies to king Cheops (4th dynasty) about the coming birth of triplets. The three children will grow up to be the first three kings of the 5th dynasty: Userkaf, Sahure and Neferirkare. Their mother will be the wife of a priest of Re, but they will be the children of Re himself⁵. This agrees well with the remarkable reverence of the 5th dynasty kings for the sun god. The first six (out of eight) kings of this dynasty

¹ *Edw.Pyr.* 176

² *Compl.* 68.

³ *Chron.* 153.

⁴ A translation can be found in *AEL-I*, 215-222.

⁵ This foreshadows the New Kingdom dogma of divine birth, where Amun (in the guise of the ruling monarch) begets the royal heir by the queen.

each build a personal sun temple, dedicated to Re. Located on the westbank of the Nile, these temples were in some way connected to the king's funerary cult. Userkaf's immediate successors erected their pyramids near Abusir, close to the place where Userkaf had build the first of these personal sun temples. The last king of the dynasty, Unas, returned however again to Saqqara. His pyramid arose at the south-western corner of the Step Pyramid complex, right across Userkaf's⁶.

1.2. Userkaf's titulary

We can hardly do a single step into ancient Egyptian history without practically stumbling over a king. In all of Egypt's history, the king, his name and his effigy, are omnipresent. All works of any importance – the building of a temple, or an expedition to collect gold or stone – were done in his name. Events were dated according to his regnal years. He was the central figure in any official's autobiography. He could even appear as constituent part in personal names. But in spite of all this "presence", these kings remain even more of a mystery to us than their gods. Of their personal lives – not to mention their ideas – we are usually totally ignorant. So, we are more or less in the position of the Kremlin-watchers of old: searching for the tiniest clues, hoping to get a glimpse of what was actually transpiring behind the facade of power ritual. This presents us more often than not with the unattractive choice of either overstretching the evidence, or resigning ourselves to ignorance.

One of the few areas that present themselves for at least some scrutiny is that of the royal titulary. Although we have no proof for the assumption that it was the king himself who decided on these names, it does seem possible, and indeed probable. And if he did, they might make up a personal statement about kingship.

The classical titulary consisted of five "Great Names". Of four of these, it is certain that they were only assumed by the king at the occasion of his ascension to the throne. These four were, in the order they have in the titulary (which largely coincides with the chronological order of their first appearance): the Horus name, the Nebti name, the Golden Horus name and the Throne name. The fifth name was the Birth name: the name that the king presumably had borne since his birth, as any other human being.

The only cartouche name of Userkaf that we are aware of ("Userkaf"), means "Powerful is his Ka"⁷. This has very much the ring of a royal name. It is a strong statement, befitting a king. So even if it is not compounded with Re, as are most of the later throne names, Userkaf is more than probably a throne name. This would mean that it could be a conscious statement of himself, about himself.

His Horus name and Nebty name are also interesting, as well as rather unusual: *iri mAat*: "Doer of Maat", or: "He who does what is right". By contrast, his Golden Horus name was conventional: *nfr*: "The Beautiful One", or "The Good One".

This king then may have looked upon himself as being (exceptionally) powerful, and one who did "the right thing". This would fit in very well with the "breakpoint" that he represents with the past: being the first of a line of kings to build a personal Sun Temple, and erecting his own Sun Temple on new, virgin building ground.

Although there are no indications for a dynastic break in the genealogical sense between the 4th and 5th dynasty, there is certainly enough here to suggest a break in

⁶ Where the distance between the complexes of Userkaf and Djoser was no more than 20 meters, Unas kept a slightly more "respectful" distance of 50 meters. But as the ancient Egyptians were above all a *practical* people, practical reasons, such as the availability of sufficient space, probably were of more concern to Unas than respect.

⁷ His immediate predecessor (although not necessarily his father) bore the comparable name of Shepseskaf: "Noble is his Ka".

approach and outlook. Starting a new dynasty with Userkaf does therefore not seem inappropriate.

Userkaf clearly was one of the sun-devoted kings that made up the substance of the 5th dynasty. All the more remarkable is the fact, that Re was not part of any of his names. Just the name of his sun temple is (as remained later the rule) compounded with Re: *nxn ra*: "Shrine of Re".

Perhaps we can see a parallel for this in the first appearance of the Pyramid Texts, rather more than a century later, in the pyramid of Unas. Those texts show, if anything, the signs of an already long and complex evolution. They must have been around for quite some time, before it was deemed necessary to carve them in stone, inside the king's pyramid. Likewise, it may not have seemed essential at first to include the name of Re in the royal titulary, even when Re in fact had become the principal state god.

2. Location and orientation of the complex

2.1. Location

It was customary to give a pyramid a name. Userkaf called his “Pure are the places of Userkaf”. As mentioned, he made a remarkable choice for its location: very, very close indeed to the magnificent, in those days no doubt still glorious complex of Djoser. If we take into account that the enclosure wall of Djoser was more than 10 meters high, the mere 20 meters separating it from Userkaf’s wall are downright astounding.

Even in a society that did not worship Progress, we can hardly expect any king to particularly enjoy presenting a stark contrast to the achievements of his predecessors. Had Userkaf chosen to erect his own pyramid at Giza, close to those of his immediate forebears, such would certainly have been the case, as the following table illustrates⁸:

King	Pyramid base	Pyramid height
Cheops	230 x 230 m	147 m
Chefren	215 x 215 m	144 m
Mykerinos	102 x 105 m	65 m
Userkaf	73 x 73 m	49 m

So, if he would have chosen a brand-new spot for his funerary complex, “away from the crowds”, we would not have had any difficulty at all in understanding his motives. But he did not. On the contrary: he decided on a location right next to the most magnificent complex of the nation: that of Djoser. With its base of 109 x 121 meter, and its height of 60 meters, the Step Pyramid itself was “just” comparable to Mykerinos’ pyramid, but the huge, walled precinct around it, measuring approx. 277 by 544 meters, with its many elegant dummy buildings, was – and remained throughout Egypt’s history – without parallel⁹.

Positioning his pyramid right next to this fairytale of a complex can hardly be explained as an attempt to make his own establishment come out better. So, there must have been another reason.

Perhaps both Userkaf and (on the opposite side) Unas sought this proximity to Djoser in order to take advantage of his “facilities” for their own use in the Hereafter: as a stage for their own Jubilees, to be celebrated for eternity. They may even have planned to “pay rent” for this use: by setting up foundations for Djoser’s funerary cult.

2.2. Orientation

The orientation of Userkaf’s pyramid complex is most unusual. First of all, it had its mortuary temple *south* of the pyramid: a position that was until then without precedent¹⁰. And even more: the internal orientation of this mortuary temple was south

⁸ Based on *Compl.* 17.

⁹ As is confirmed by the admiring graffiti from New Kingdom “tourists”.

¹⁰ And it remained very rare, too. Only Sesostri III had, at his pyramid complex at Dashur, a temple south of the pyramid. This was an additional temple, constructed in a later phase of extension. On the usual east side, a smaller temple had already been build before.

again: away from the pyramid. For this, no other example is available anywhere in Egyptian history.

This matter of orientation then touches on two aspects of pyramid complexes in general:

1. Their relation to the cardinal points,
2. and the function of the internal layout of the mortuary temple.

2.2.1. The cardinal points

Egypt is a country with two natural axes:

- east-west, for the rising and setting of the sun,
- and south-north, for the flow of the river Nile.

The night sky adds two additional elements to the south-north axis:

- to the north, the circumpolar stars circle forever in view: a strong image of everlastingness (for which they were called “The Imperishable Stars”);
- and to the south Sirius, the brightest star of all, after staying below the horizon for several months, returns at exactly the moment that – also starting from the south – the inundation season begins: a promise of rebirth.

There need not be any doubt that these squared axes had a strong influence on the ancient Egyptian mind. The words for “travel upstream” (*xnti*) and “travel downstream” (*xdj*) were also in use with the meaning of “going south” and “going north”, respectively. The Hereafter was located in The Beautiful West, and the sun rose each morning majestically out of his light-filled homeland (or Achet) in the East.

Although these axes are readily discernable – in fact: hard to miss – they are certainly not immaculate. The point where the sun rises and sets varies a little, depending on the season. And although the general course of the Nile is from south to north, its many twists and turns provide countless deviations from the general rule. We need therefore not be terribly surprised at finding the orientation of most buildings to the cardinal points in Egypt to be far from perfect.

In the case of temples, the deviations remain quite substantial throughout Egyptian history. Temples are as a rule oriented towards the banks of the river Nile, under the assumption that these banks run always exactly south-north. As they obviously don’t, the great pylon may be as much as 90 degrees off its supposed eastward or westward orientation.

As regards tombs, we find that neither the Early Dynastic royal tombs of Abydos, nor their associated valley enclosures, show any sign of orientation whatsoever. Their counterparts at Saqqara are mostly oriented along the natural lines of the desert cliffs. Only those that lie a little behind the others, out of direct view from the valley floor, are oriented (roughly) towards the north. One of these is tomb 3505, dated to the reign of Qa’a, last king of the 1st dynasty. Its orientation is some 4° west of true north¹¹. On its north side was the first known example of a mortuary temple.

The next opportunity to check for orientation is Djoser’s Step Pyramid complex. This clearly favored a south-north axis:

- The entrance to the pyramid substructure was from the north.

¹¹ According to the plan in *Compl*, page 78.

- The mortuary temple was on the north. (Edwards describes its groundplan as “reminiscent” of the one from Qa’a¹².)
- Adjacent to the mortuary temple was a serdab, with its own court: also aimed to the north.
- The serdab itself was tilted some 16° up, giving Djoser the appearance of an astronaut, ready to be launched north towards the Imperishable Stars¹³.
- On the far north of the site was a large altar.
- And just south of the pyramid was again an altar (or perhaps rather a pedestal for an obelisk).

Yet even in this layout, there was one important east-west element: the longer axis of the pyramid itself.

The outer walls of the Step Pyramid complex are only about 2° off true north: to the east this time. That may have been luck though, as the orientation of the complex of his successor Sekhemkhet is more than 10° off to the west¹⁴. It was not before the 4th dynasty, that any serious attempts were made to achieve a more accurate orientation – culminating in an error of only 3’6” by Cheops¹⁵.

The other mortuary complexes of the 3rd dynasty were never completed to the point where we could compare them with Djoser’s, although Sekhemkhet’s basic outlines strongly suggest a comparable (south-north oriented) scheme. From the 4th dynasty onwards, we find the importance of the east-west axis steadily growing. Although the entrance to a pyramid remained on its north side¹⁶, a small chapel now appeared to its east. Soon this evolved into an elaborate mortuary temple. The east-west orientation was further accentuated by a sequence of harbor, valley building and causeway leading up to the new eastern mortuary temple.

Then in Userkaf’s compound, the south-north axis was suddenly enhanced again, at the partial cost of the east-west orientation. The mortuary temple was moved from the east to the south, leaving only a modest¹⁷ offering chapel on the east side – not unlike the simple structures of the early 4th dynasty, notably the one at Meidum.

We will have a shot at the reasons for moving the temple *south* of the pyramid, later. For the time being, we will content ourselves with the notion, that Userkaf decided again on south-north as the main orientation for his pyramid complex.

For this remarkable shift, there may have been either circumstantial, or willful reasons. In the circumstantial area, the following possibilities can be identified.

First of all, it may simply have been the proximity of Djoser’s complex itself, that spurred Userkaf into mimicry. Already associating himself closely with Djoser in the location of his complex, following into his footsteps even further by adopting some of his architecture would have been a natural thing to do – and Djoser’s complex was definitely oriented south-north.

Alternatively, if Userkaf had – for whatever reason – already decided on this particular location, lack of space could have forced him to adopt a south-north orientation. There is some evidence for the former existence of a kind of moat, once surrounding all of Djoser’s complex¹⁸. The area enclosed by this moat may at this place have been just

¹² *Edw. Pyr.* 60.

¹³ This again is a fine example of the general Egyptian contentment with approximations. The angle of the outer casing of the lowest step of the Step Pyramid was 74° (= 90° - 16°). It was therefore convenient to use an angle of 16° as the tilt for the serdab (because it would allow for the use of square blocs). To aim for the stellar north pole, the tilt should, at this latitude, have been 30°.

¹⁴ Measurements based on *Atlas* 144-145.

¹⁵ *Compl.* 108.

¹⁶ This feature was consistently retained until well into the Middle Kingdom, when security concerns finally prevailed. But even then there was always a northern “entrance chapel” projected – partly serving as a decoy, we may assume.

¹⁷ Modest by comparison: it was still some 15 meters wide.

¹⁸ *Compl.* 141.

wide enough to accommodate for the inclusion of the pyramid, but not to allow for a mortuary temple to its east.

Or perhaps Userkaf extended the moat, so as to include his pyramid. This would have meant a huge amount of extra work. Having the mortuary temple either south or north of the pyramid would have had the attraction of curtailing the required labor significantly.

However, considering how vital the links between architecture and creed tended to be in ancient Egypt, circumstantial reasons seem too ephemeral to cause any drastic deviation from tradition. And in a way, the pyramid complex of Unas, last king of the 5th dynasty, confirms this notion. After all, Unas apparently sought a close association with Djoser too, but he builds his own complex prim and proper in the usual east-west orientation.

So, let's take a look at some possible functional reasons for this unique design.

2.2.2. The layout of mortuary temples

Even as Userkaf had decided on a south-north orientation, he still had, with respect to the mortuary temple, two additional choices to make.

- He could put it either north of the pyramid (as Djoser did), or south.
- And he could, either way, aim its sequence of court, hypostyle and niches either towards the pyramid, or away from it.

Now although the position of the mortuary temple in relation to the pyramid could vary at least to some extent (either north or east), its *orientation* was always *towards* the pyramid. Always, except in this one case.

At first sight, this strange fact only multiplies our problems. On closer inspection, it provides the first part of a possible solution.

In most royal mortuary temples of the Old and Middle Kingdoms, we find two separate offering rooms: one with a false door stela, and one with five statue niches¹⁹. At least the middle niche contained a statue of the king. The others may have been for statues of gods, as is suggested by the layout of some New Kingdom temples; there may however also have been five statues of the king.

The sanctuary with the false door was always behind the one with the statues, suggesting a more personal, more intimate position.

These two focal points corresponded with the two aspects of the king: he was, after all, both man and god. As a man, he would benefit from the offerings that were presented in front of his false door. As a god, he would enjoy the divine cult (which included, besides food offerings, all the aspects of groom and pleasure, such as washing, anointing, clothing, incense, dance and music) that was performed for his statue²⁰.

In the case of Userkaf, the double focus was expressed into two separate buildings: a mortuary temple south of the pyramid for the statues, and an offering chapel east of the pyramid for the false door. We will take a look at both in turn, to see whether they can give us any clues as to the reason for this exceptional layout.

With the eastern offering chapel, we are quickly done. Everything about it strictly conforms to tradition: its apparent function, its location in respect to the pyramid, and its orientation towards the pyramid's interior. It is the mortuary temple to the south, with its orientation *away* from the pyramid, that presents us with a challenge.

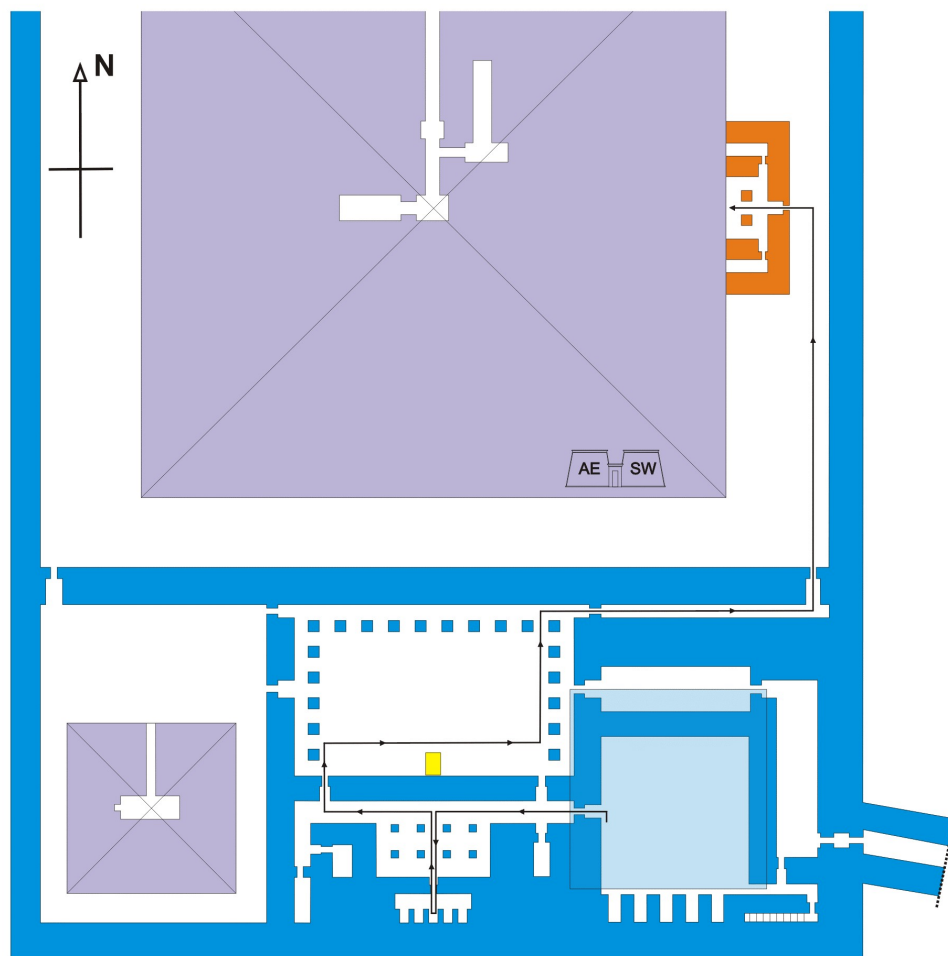
What was the significance of the usual orientation of a mortuary temple *towards* the pyramid? It served as a psychological funnel, focusing all attention towards the center

¹⁹ So (a/o) Chefren, Mykerinos, Pepy I and II, and Sesostris I.

²⁰ For more about the double nature of the king, see *Magic*, especially pages 55-68.

of the pyramid: to the burial chamber with its sarcophagus. Every step the priests would take, from the valley building, over the causeway to the mortuary temple, and inside the temple, would bring them closer to the body of “this august god”. First, they would arrive at the statue niches, where they would perform the divine rites. Then, on the same run, they would serve dinner for His Majesty in his most private inner room: the sanctuary with the false door stela, where he would step out of his beautiful pyramid, to take his “bread and beer, his oxen and fowl, his clothing and alabaster, and all things good and pure that a god lives on”.

In the case of Userkaf however, the priests had to follow a very different trajectory. Assuming that they would in any event have preferred to stick as closely as possible to tradition, they may have taken the following route (see also the explanatory plan on page 12):



Upon leaving the causeway, they went, via the now destroyed area in the south-east of the complex, through the eastern entrance into the hypostyle. From there, they reached the statue niches, where they performed the divine cult. They may then have left the hypostyle towards the west, entering the open court in its south-western corner. They would then pass in front of a colossal statue of the king, made from red granite. Only its head, wearing (like Djoser’s statue in his serdab) the Nemes headcloth, has been found; it is now in the Cairo Museum. This head was more than 2,5 times life size, so the statue would have been somewhere between 3,5 and 5 meters tall – depending on whether it was seated or standing. As far as the evidence goes, this was

the first colossal royal statue ever²¹. For this gigantic statue, the priests no doubt presented offerings again. They then continued eastward, leaving the open court at its north-eastern corner. Reaching the courtyard around the pyramid itself through its south-eastern entrance, they could then proceed towards the eastern offering chapel, to complete their duties, offering in front of the false door.

In this way, the priests could stay fairly close to the traditional procedure – minimizing the damage, so to say. But why put up with any “damage” at all? What may have been the bonus in this unusual arrangement?

One obvious advantage of having the temple south of the pyramid would have been, that the shadow of the pyramid would never fall on the open court. This would have been in line with the contemporary ascent of the solar cult. It can however not explain why the *orientation* of the temple was south.

Next to the position and the internal orientation of the temple, there is here one more unusual factor: the colossal statue, placed out in the open. Both its size and its location were novelties. It provides us with the second part of our solution.

What was the view of this statue? It was gazing towards the pyramid, and to the northern sky beyond it. As we have already seen (at page 7), the northern night sky had a specific religious meaning for the Egyptians. It was the abode of the circumpolar stars: those stars that never set, but circle forever in sight around the heavenly north pole. These “Imperishable Stars” made a compelling image of everlastingness, and thereby an appropriate goal for the spirit of the deceased.

Having the statue south of the pyramid would mean, that the pyramid would block out from view part of the northern sky. During the night, the effect would be that for the statue, the tip of the pyramid would point more or less towards the stellar north pole: the place where the spirit of the king had gone²².

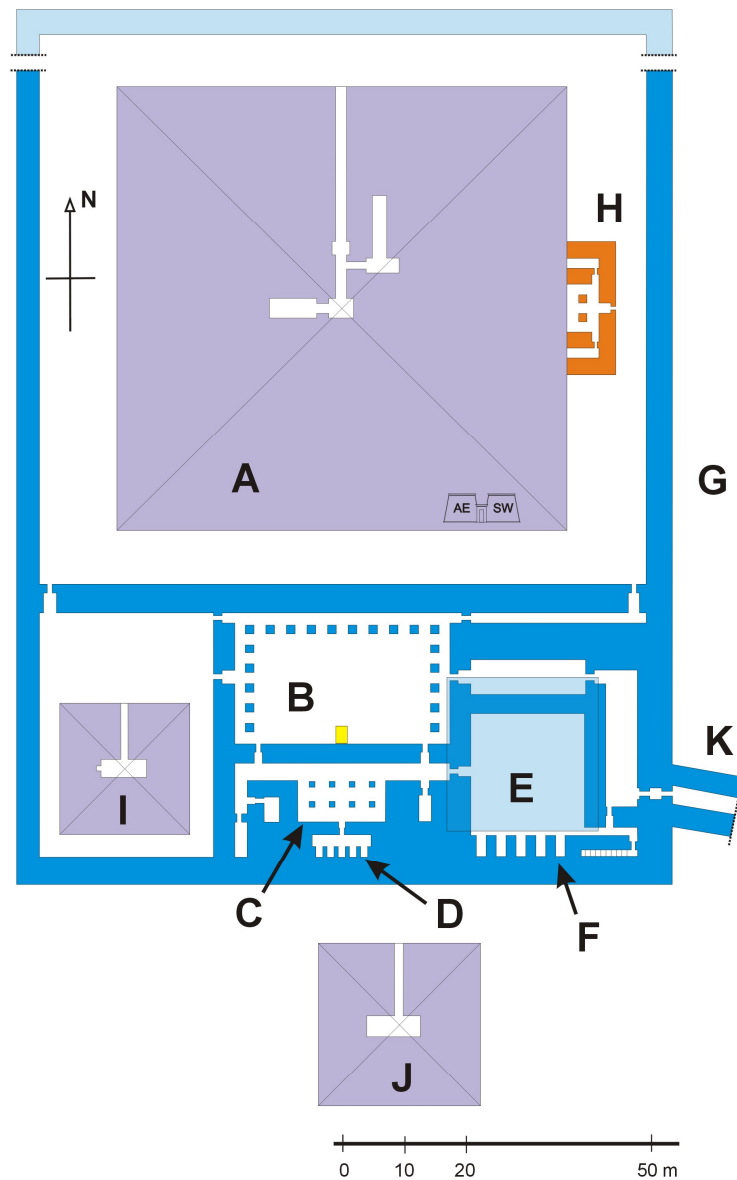
²¹ Not counting the Sphinx at Giza, which forever remained something of an exception.

²² It would of course have been really great, if it turned out that the line of sight from the statue over the tip of the pyramid would aim exactly at the stellar north pole. Unfortunately, calculations show that this would require the statue to be somewhere inside the hypostyle. On the other hand: Userkaf’s gaze would still have been a lot closer to the north pole than Djoser’s (see footnote 13, on page 8).

3. The pyramid complex

We will conclude this short paper with two different views on the complex: first a short description, and then an illustrated tour around the complex today.

3.1. A short description



A. The main pyramid.

Originally, it had a casing of fine white limestone, of which nothing now remains. The burial chamber was also entirely built from limestone: walls, ceiling and gabled roof. The sarcophagus was from basalt²³.

²³ Compl. 140.

- B. The open court.
It had roofed galleries on three sides, with monolithic square granite pillars. The limestone walls behind the pillars were decorated with reliefs: a few fragments were found during the excavations. They show the king while hunting in the Delta marshes²⁴.
In front of the south wall of the court stood a colossal statue of the king (here indicated with a yellow rectangle). Only its head was found. Depending on whether the statue was seated or standing, it would have been either 3,5 or 5 meter high. As far as we know, it was – not counting the Sphinx at Giza – the first colossal royal statue of ancient Egypt.
- C. The hypostyle, with eight pillars.
- D. A series of five niches for statues. In New Kingdom examples. the middle niche was for a statue of the king, and the others for different gods. Whether this was also the case in the Old Kingdom is not certain: perhaps all contained a statue of the king.
- E. This part of the mortuary temple was destroyed in antiquity, for the construction of a Saite tomb.
- F. A series of five magazines, probably corresponding with the five niches. This means that either cultic requisites, food supplies, or both were stored separately for each individual statue.
Since very few storerooms have been found elsewhere in the complex, the part that was destroyed by the construction of the Saite tomb probably contained some more of these.
- G. The enclosure wall.
The northernmost section was never excavated: its indicated position is hypothetical.
- H. The eastern offering chapel. On both sides of the central offering room was a narrow side chamber.
The walls of the central room had a dado (lower part) of granite. The upper part of these walls was limestone, carved with fine reliefs. The floor was of basalt again, just like in the open court. Two square pedestals were found here: these may have been bases for pillars, or for two stelae, like the ones found at Meidum. In Meidum, these stelae stood in a room that was open to the sky. In fact, both the granite dado and the black basalt pavement would agree better with an open room, then with a roofed one. To the west (closest to the pyramid) was a quartzite false door stela²⁵. The narrow side chambers (probably magazines, and probably roofed) had a floor of limestone.
- I. The subsidiary or satellite pyramid. It had sides of c. 21 meters²⁶. Since this was in all likelihood not a true pyramid (see page 20), its original height can not be estimated.
- J. A queen's pyramid. It had sides of c. 26,25 meter, and was probably about 17 meters high. It once had its own mortuary temple – as was not uncommon for a queen's pyramid.
Opinions about the original owner of this pyramid vary – as again is not unusual with queen's pyramids. Lehner simply states that the owner is not known²⁷.
- K. The causeway (not excavated).

A valley building has not been found.

²⁴ *Edw.Pyr.* 176.

²⁵ *Compl.* 141.

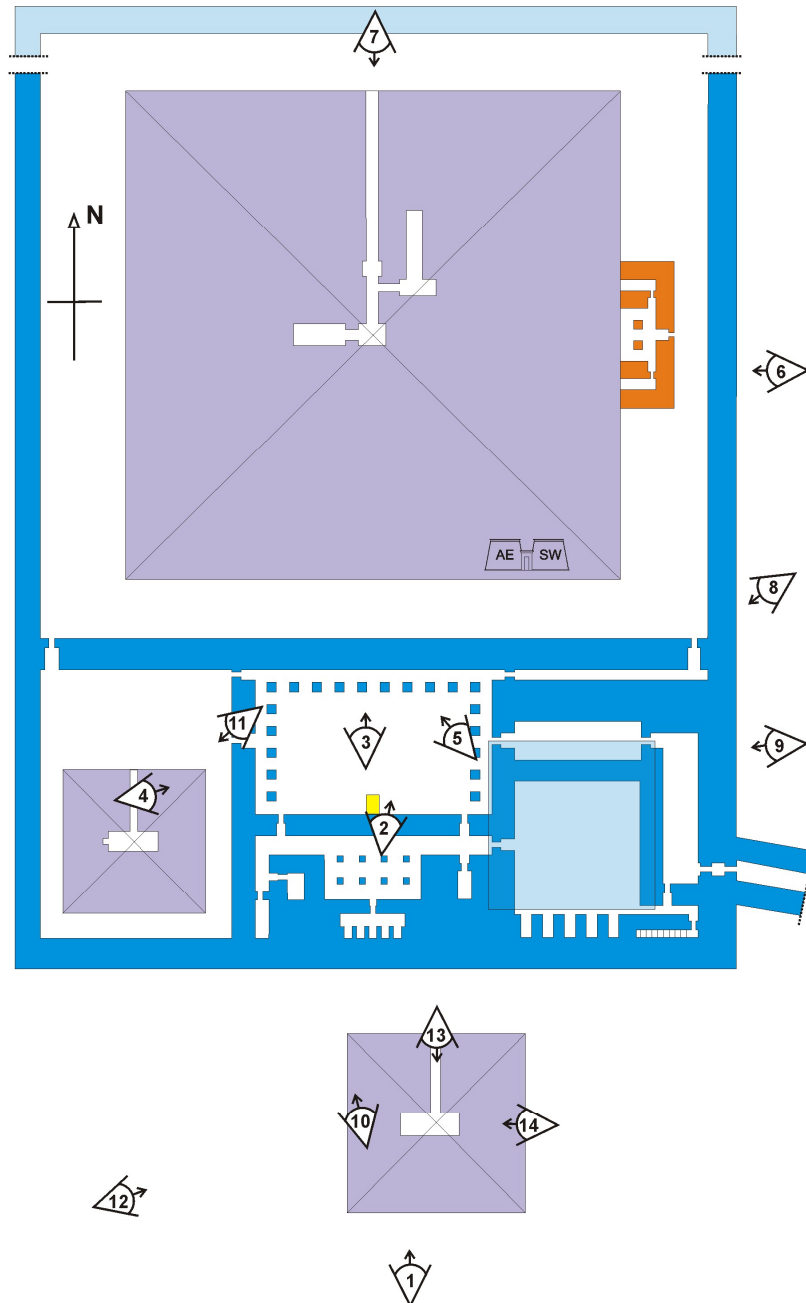
²⁶ *Compl.* 141.

²⁷ *Compl.* 141.

3.2. A walk around Userkaf's pyramid today

We will start our tour on the pyramid's south side. We will then turn east, then north. Subsequently we will take a look at the satellite pyramid, and finally the queen's pyramid.

This plan shows the standpoints from where the various photographs were taken:



The numbers refer to the numbers of the photographs, as listed below.

THE MAIN PYRAMID: ITS SOUTH SIDE, AND ITS MORTUARY TEMPLE



Fig. 1.

Coming from the south, this would be your first look at the pyramid. You would not be able to tell yet, but the sand dune in the forefront hides a queen's pyramid.

When it was finished, with a casing of fine, bright limestone, Userkaf's pyramid was no less impressive than those at Giza. Its interior however was constructed in a very different way. When the casing was gone (stripped away as building material, or even as raw material for making fertilizer), decay set in very fast.



Fig. 2.

On the other side of the queen's pyramid, somewhere between the temple's hypostyle and open court, you can now cast an appraising look at the entire complex: glory in decay. The scattered stones of black basalt in the forefront belonged to the court's pavement.



Fig. 3.

A bit closer to the pyramid, still.



Fig. 4.

The open court again, but now seen from the west: from above the satellite pyramid. The main pyramid is to the left. In the forefront you see the sands covering the satellite pyramid. Just beyond this are a few patches of basalt pavement that still look fine. The open, flattened square in the right-hand background is the area that was destroyed when the Saite tomb was constructed.



Fig. 5.

A detail of the black basalt pavement in the eastern section of the court.

THE MAIN PYRAMID: THE OFFERING CHAPEL ON THE EAST SIDE

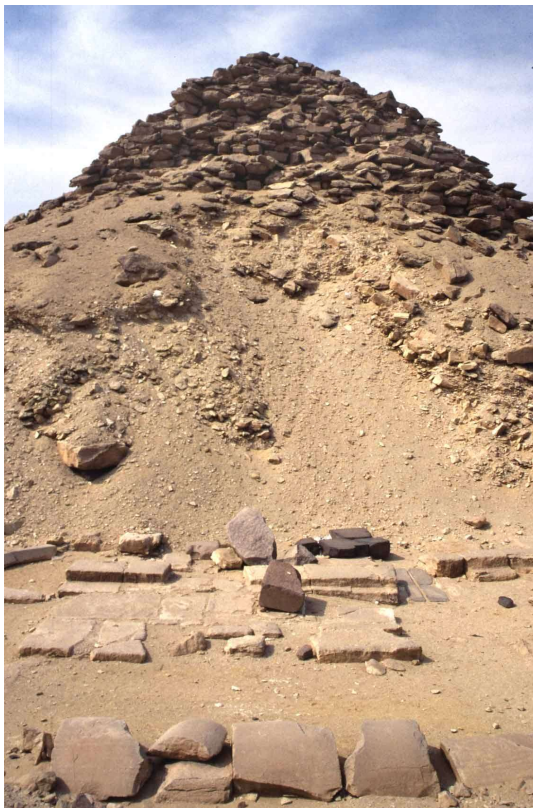


Fig. 6.

This picture was made a few steps left (= south) of the former axis of this chapel. On the background to the right is a small drain, leading towards us. It was cut into the granite foundation blocks of the entrance doorway, on the east-west axis of the offering chapel²⁸.

The black (basalt) stones behind this were part of the pavement of the central room of this chapel.

The rounded stones in the forefront may have originated from the top of the enclosure wall.

²⁸ Observation by John Legon, as part of an EEF thread.

THE MAIN PYRAMID: NORTH SIDE

As is usual, we find the entrance to the pyramid's substructure on its north side.



Fig. 7 A.

From here, we have an excellent view on the core masonry.

These stones don't show the remotest similarity to those of the Giza three. They have either not been squared at all, or just in the most summary way. Gaps have been filled in with chips, pebbles and gravel.

Most likely, a layer of better dressed backing stones was used to contain the whole mess, thereby also acting as support for the outer casing stones²⁹.

A detail of the entrance. The building "technique" employed was "heap-and-shove". Look at the ominous cracks in the larger boulders, and at the modern masonry that is needed to keep it from collapsing.

The customary sign "Closed for restoration" was missing, but I didn't feel the least bit tempted to enter.

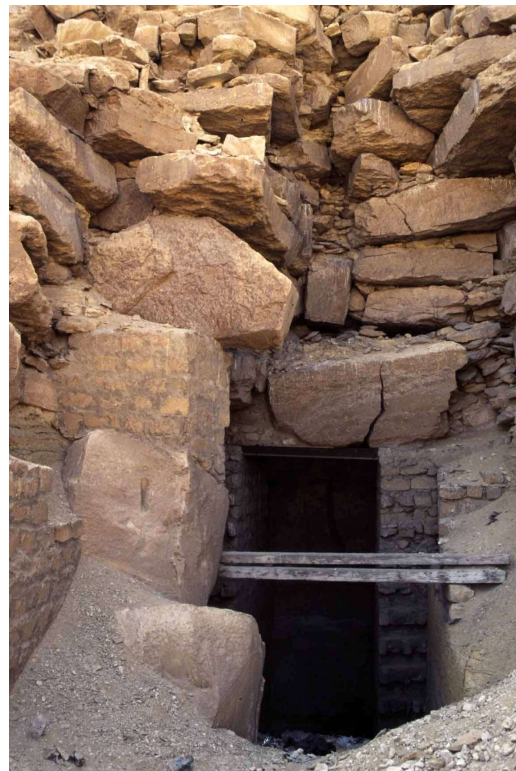


Fig. 7 B.

²⁹ See *PSM* 160, fig. 4.88.

THE SATELLITE PYRAMID

Also called the subsidiary pyramid.



Fig. 8.

This photograph is taken from just east of the former enclosure wall, facing southwest across the court. In the background is Djoser's Step Pyramid. (We are looking almost exactly over its northeast-southwest diagonal). The low ridge in the background to the right indicates where Djoser's enclosure wall once stood. The slope in the lower right-hand corner of the picture is the southeastern corner of Userkaf's pyramid. To the left of this you can see the black basalt slabs that formed the pavement of the court. Behind those are the tattered remains of the satellite pyramid.



Fig. 9.

This one is from a standpoint a bit further to the south, zoomed in on the satellite pyramid. In the upper left-hand corner, you can just see the north-western corner of the Step Pyramid.



Fig. 10.

This is a look at the southeast corner of the satellite pyramid, seen from above the queen's pyramid. To the right is part of the open court, and the main pyramid.



Fig. 11.

The northeastern corner of the satellite. Here you can see just how steep this pyramid would have been, had it been completed as a true pyramid. An original design as step pyramid, like some of the queen's pyramids at Giza (or perhaps even a mastaba?) seems more likely.



(Fig. 8.)

Back for a minute to an earlier shot. Here you see again the satellite pyramid, with behind it the Djoser's Step Pyramid. The similarity of both is remarkable. Perhaps the satellite pyramid was deliberately fashioned like a miniature of Djoser's Step Pyramid.

THE QUEEN'S PYRAMID



(Fig. 1.)

Back to our first shot: the main pyramid, seen from the south. The sand dune in the forefront hides the queen's pyramid.



Fig. 12.

This is the queen's pyramid again, now looking from the west. The heap of rough stones on top of the "sand-dune" are the remains of its top. To the left you can see that the complex was actually lying in a depression – perhaps the quarry where the core stones came from. The hazy bluish green stripe in the background is the vegetation in the Nile valley.

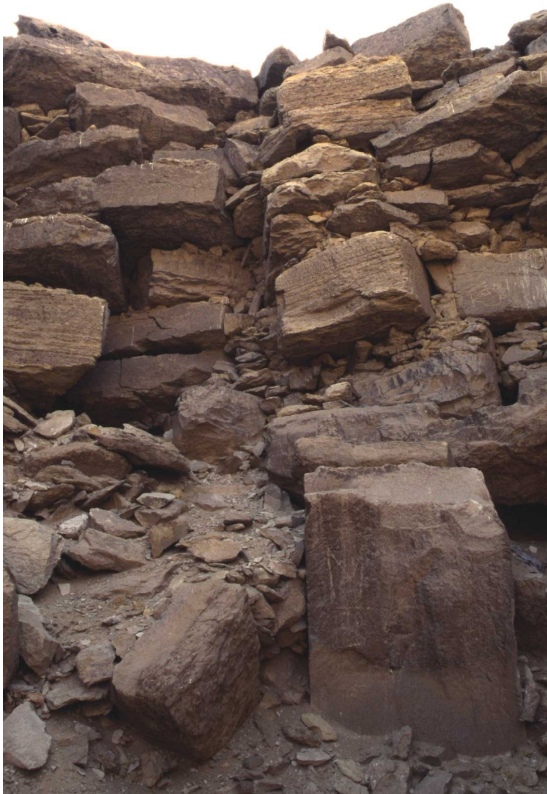


Fig. 13.

From the north, right above the original entrance to the queen's pyramid, a large gap opens in its body. Perhaps this part contained building stones of a better than average quality, so that quarrying was more rewarding here. (In fact, this looks more like a natural quarry, then as the remains of a man-made building.) The large, rectangular stone in the foreground is almost 2 meters high.

This is where the work once began: in a pit in the bedrock, the burial chamber was constructed from blocs of limestone. Its roof was made of heavy limestone beams, put against each other in the form of a giant inverted “V”. To the right you can see the stump of a broken beam.

This type of construction was used throughout the 5th and 6th dynasties. Although not a real arc, it is still quite effective as a means of relieving and distributing pressure.

When the roof was complete, it was covered with core stones, haphazardly laid.



Fig. 14.

Compl. 141 shows a picture from this burial chamber that was made during excavations. Here, the room was dug out a lot deeper. It may have been filled again to prevent anyone from falling in. (The caption erroneously speaks of the satellite pyramid).

4. Bibliography

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