Zahi Hawass

THE TREASURES OF THE PYRAMIDS
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Scene showing the 'Meidum geese,'
Egyptian Museum Cairo, Old Kingdom.
The Satellite Pyramid of Khufu

by Zahi Hawass

In 1991, my team at Giza was working to the east of the Great Pyramid of Khufu, clearing the area as part of our site management plan. The area had been explored before by George Reisner, and by the Antiquities Department under Selim Hassan who moved many meters of sand and excavated Khufu's upper temple. After Hassan's excavations were complete, the Antiquities Department prepared the site for visitors, and in the process built a paved road running north-south along the east face of the pyramid. We decided to move this road in 1991, in order to prevent cars and buses from driving on the basalt pavement of the upper temple. During this work, we made a startling discovery: a new subsidiary pyramid, the satellite pyramid of Khufu, lay under a mound of sand at the southeast corner of the Great Pyramid.

This pyramid is located about 25.5 m southeast of the corner of Khufu's pyramid. Its ruins cover an area approximately 24 meters square. The remains include fine, Tura-quality limestone blocks from the pyramid's outer casing and perimeter foundation, some of which remained in situ, large blocks of cruder limestone and debris that filled the core of the pyramid, and a T-shaped substructure.

When we first found the pyramid, all that remained of the superstructure was a U-shaped block of crude masonry and debris filling the substructure. The east and south sides of the pyramid were cut to a depth of about 5.35 m to a rectangular chamber, oriented east-west and entering from the northeast corner. We found the substructure unroofed, exposed to the sky. There was a cutting in the floor of the rectangular chamber, one meter wide, immediately in front of the opening into the chamber from the entrance passage. The walls of this chamber were cut to a depth of 2.85 m, the north and south walls slope inward slightly as they go up.

At the north end of the chamber there are four small holes, a pair each in the north and south walls respectively. The backs of the holes are round. They are about ten meters deep, and the holes of each pair are spaced about 1.45 m apart. These appear to be sockets for wood cross-beams, perhaps for lowering or covering an object in the west end of the chamber. Since the upper part of the burial chamber is no longer extant, and no ceiling blocks remain, the original shape of the chamber remains a mystery. There are traces of red mortar on the floor of the burial chamber and on the south side. This mortar could indicate that the chamber was originally paved with limestone.

So that visitors to Giza can get an idea of the original appearance of this pyramid, and to preserve the loose and crumbling core material, we replaced some of the fallen blocks and restored parts of the satellite pyramid with new masonry. We also reconstructed the apex of the pyramid, incorporating the pyramidion and the trapezoidal block from the third course down with newly constructed blocks.

The satellite pyramid was an important feature of the standard Old Kingdom pyramid complex, and the discovery of this pyramid is extremely important to our understanding of these structures. Many scholars believe that the subsidiary pyramid can be traced back to a mysterious structure in the first pyramid complex, that of the Third Dynasty king, Djoser, called the 'south tomb.' This is a mastaba that lies south of the main pyramid, and has a square burial chamber, too small to hold a body. We uncovered the walls of the substructure of this tomb, but the pyramidion and the trapezoidal block from the third course down with newly constructed blocks.

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The remains of the satellite pyramid of Khufu from the south sides. Giza, Fourth Dynasty.

The lack of a satellite pyramid in Khufu’s complex has always been a stumbling block in the discussion of these ritual structures, and now we have filled in this gap. Khafre may have had a ritual pyramid, placed directly south of his main pyramid and on the same north-south axis. Inside this subsidiary pyramid were wooden fragments that have been reconstructed as belonging to a statue shrine, ox bones, fragments of stoppers from jars or vases, one of which reads, “The eldest royal son of his body, beloved by him, the sole friend,” and two carnelian necklaces. However, this might also be a queens’ pyramid, in which case we do not have a ritual pyramid for Khafre. Menkaure does not seem to have had a ritual pyramid; it is interesting to note that he also had no boat pits. We know he died before his complex was finished, so it may be that his ritual pyramid and boat pits were never built because of his early death.

The standard pyramid complex of the Fifth and Sixth Dynasties includes a satellite pyramid, usually located at the southeastern corner of the complex (like Khufu’s). There is still a great deal of discussion among scholars about the function of these structures. Some believe that they were for the royal ka, one aspect of the king’s soul, or to store his canopic equipment (the viscera, which were removed and packaged separately) or placenta. Others suggest that they were built to house the royal crowns, as provisional tombs to store the king’s body while he was being embalmed, or as solar symbols for the storage of offerings. I believe that the satellite pyramids were used during the sed festival, perhaps as a changing room where the king removed his jubilee cloak and put on the kilt and bull’s tail in which he would perform his ritual dance.

I believe that Khufu originally planned to place his satellite pyramid north of the three queens’ pyramids, and that the so-called ‘trial passage’ that lies north of the causeway was cut as the substructure of this pyramid. After Year 5 of his reign, when Khufu changed his cult and took on the role of the sun god Re, he enlarged the upper temple and abandoned the original satellite pyramid. G id, the new satellite pyramid, appears to have been built in a hurry near the end of Khufu’s reign, or perhaps even a few days after his death.
The Secrets of the Pyramid

Text by Zahi Hawass

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