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ORIGINS OF PYRAMID GI-D,  
SOUTHEAST OF THE GREAT PYRAMID  
Charles Rigano

# Origins of Pyramid GI-d, Southeast of the Great Pyramid

Charles Rigano

**T**he Giza Plateau may be the most excavated ancient site in the world. For 200 years archaeologists have been clearing the monuments and moving sand and debris from this enormous area covering nearly a square mile. Yet modern excavators can still make significant finds beneath the sands. A subsidiary pyramid which I call “GI-d” is one such recent find (Brock 1993:10-11, Note 1).

All pyramids do not fit our standard notion of what pyramids should look like. After thousands of years of vandalism and stone robbery, today some are little more than holes in the ground. That is much the case here. What remained of GI-d was covered by rubble and went unnoticed by George Reisner when he excavated the eastern and western cemeteries and subsidiary pyramids around the Great Pyramid from 1902 to 1939. Some years ago an asphalt road was built from the northeast corner of Khufu’s Great Pyramid, over the top of what remained of the mortuary temple basalt courtyard and the debris covering GI-d, and connected to a road that went down to the Sphinx. In the winter of 1992-1993, this road along the east side of the Great Pyramid was removed and the surface cleared to bedrock revealing GI-d. This pyramid was totally ruined with only a few core and casing blocks remaining

in situ along the east and south sides. The substructure was cut into the bedrock and open to the sky. Parts of the pyramidion were found, rebuilt, and placed on display at the site (Hawass 1996:379-398).

The substructure was simple, composed of a descending passage which enters a 9-foot deep rectangular chamber with slightly inward sloping walls. There is no evidence that the chamber was lined with blocks but significant amounts of pink plaster remain on the walls. The descending passage enters the chamber 18 inches above the floor. In the chamber floor, just below the passage, there is a shallow hole that may have held an angled stone which continued the ramp down to the chamber floor.

Egyptologists seemed to immediately accept GI-d as the fourth of Khufu’s subsidiary pyramids which served as his ritual pyramid and was possibly used during Khufu’s Heb Sed festival. I had visited the ruin and climbed down into its chamber several times and this seemed to me at first to be a logical conclusion.

However, seeing the site in an aerial photograph and being better able to evaluate its location relative to other ancient structures made me rethink this ascription. This tiny pyramid differs considerably from Khufu’s three subsidiary pyramids - GI-a, b, and c - and is located in a



**(Left) GI-d, looking down into the chamber with the descending passage entering from the left. The blocks along the passage are reconstructions. (Right) The chamber interior with the inward sloping walls cut into the bedrock.**

spot that indicates all surrounding monuments were built first. This led me to theorize that GI-d was not contemporary with Khufu, but was constructed during a later period. The data supporting my theory follows.

The differences between GI-d and Khufu's three subsidiary pyramids are significant. The chart below compares their dimensions. GI-d was less than half the height, less than half the base length and only about 10% the volume of each of the other three pyramids.

The substructure of GI-a, b, and c are almost identical and appear to have been built one after the other to the

Except for a short distance at the top of the first descending passage, the rest is cut wholly within the bedrock as compared to the T-shaped pit, open-to-the-sky construction of GI-d.

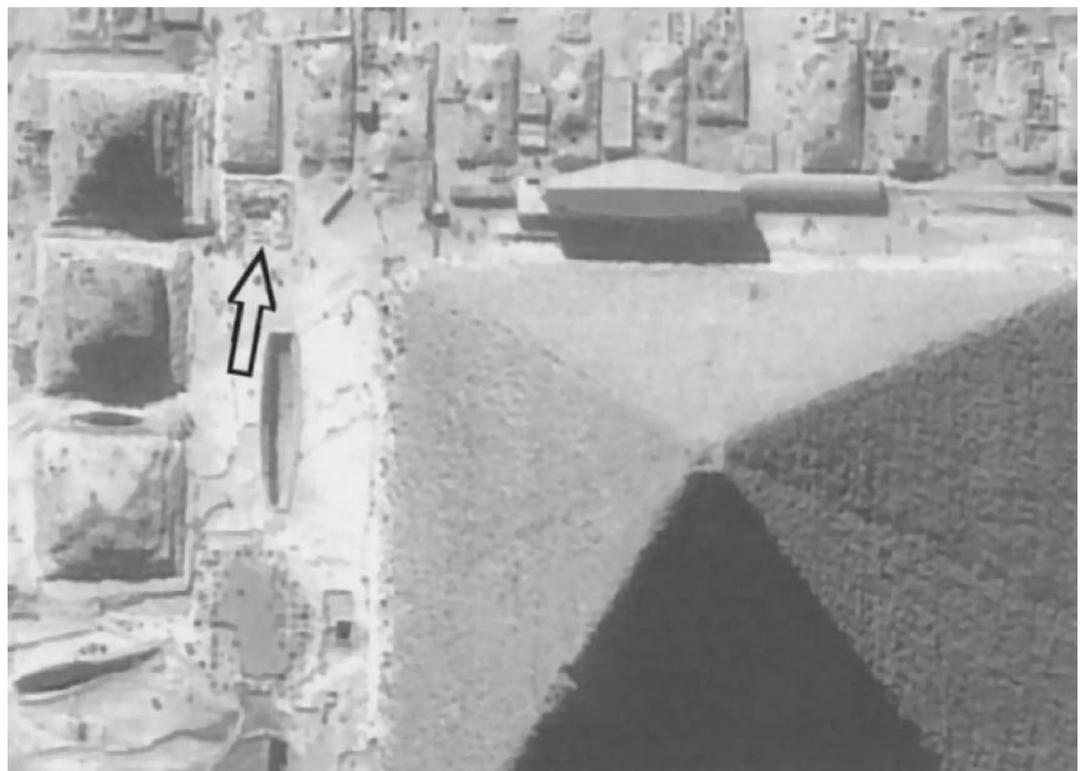
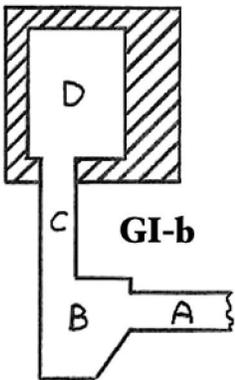
While its size and internal arrangement clearly set GI-d apart from Khufu's other three subsidiaries, it does bear a strong resemblance to GII-a, the very ruined minor pyramid to the south of Khafre's Pyramid

From ground level there seems to be nothing special about the location of GI-d. However when seen from the air, a different picture emerges. Khufu's builders

	GI-a	GI-b	GI-c	GI-d
Estimated Height	99'	100'	95'	45'
Face Angle	51°50'	51°50'	51°40'	51°45'
Base	156'	157'	151'	71'
Volume (cubic feet)	803,000	822,000	722,000	76,000

same general plan with only slight variations. Each pyramid has a descending passage (A) leading to a turning space (B) designed so that long objects could make the 90° turn into a short, second descending passage (C) which leads to the burial chamber (D). Cross-hatching indicates laid limestone blocks which lined the burial chamber.

constructed an inner enclosure wall 33 feet from the base of the main pyramid (Maragioglio and Rinaldi 1965:66) and excavated two rectangular boat pits just outside the wall to the south. These boat pits date to the end of Khufu's reign since large wooden boats apparently used during the funeral ceremony and cartouches of Djedefre,



**ABOVE:** Outline drawing of GI-b is typical of the three subsidiary pyramids, GI-a, GI-b and GI-c. **RIGHT:** The area east of Khufu's Great Pyramid. North is toward the bottom of the picture. The Great Pyramid is the large structure at bottom right; the three subsidiary pyramids are along the left side of the image. The arrow points to GI-d. Image by spaceimaging.com

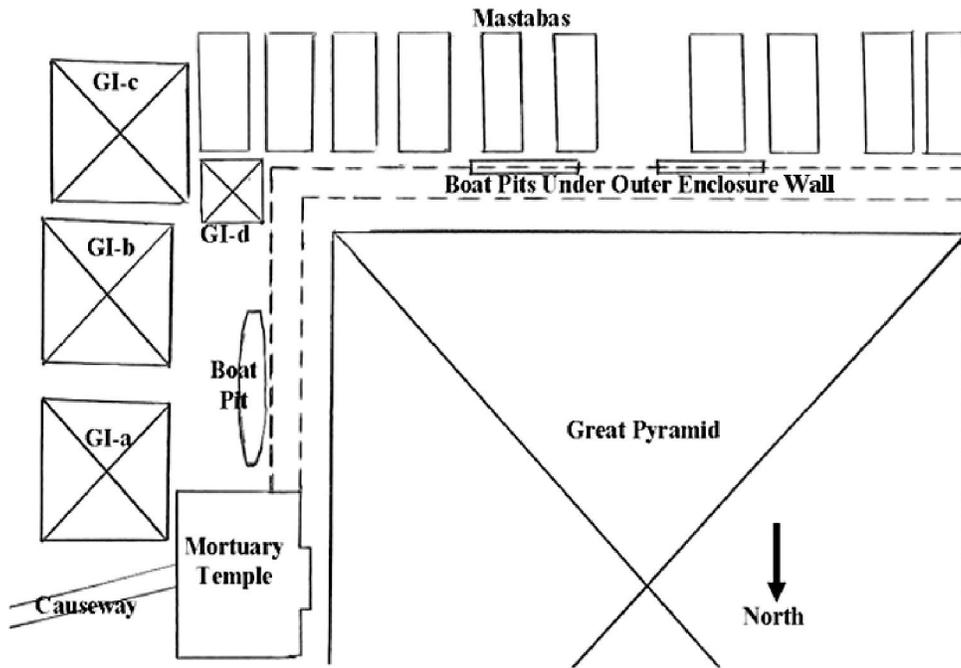


Diagram of the area shown in the aerial photograph, south and east of the Great Pyramid. Dashed lines indicate the positions of the inner and outer enclosure walls. The position of the outer enclosure wall east of the Great Pyramid is estimated. GI-d was built last in a small space defined by the already-existing structures.

the next king, were discovered in the pits. Apparently these boat pits were covered by sand and forgotten when an outer enclosure wall was constructed over top of the boat pits 61 feet from the Great Pyramid base. Remains of this wall are found to the south, west, and north of the Great Pyramid; no remains are visible to the east.

Ten mastabas, dated by Reisner to the end of Khafre's reign or the beginning of Menkaure's (Reisner 1942:83), about 30 years after completion of Khufu's mortuary complex, are aligned with this wall. If the mastabas were built before the wall, it is likely that the mastabas would have been sited closer to the Great Pyramid, over the top of the hidden southern boat pits and aligned with the inner enclosure wall. Therefore, the wall must be either contemporary with or of an earlier date than the mastabas. While there are no remains of the outer enclosure wall to the east of the Great Pyramid but there are on the other three sides, it is likely that the wall was also present on the east side.

The outer enclosure wall, the mastabas, the three subsidiary pyramids, and boat pit set the boundaries of a small, relatively flat area close to the Great Pyramid. It is very unlikely that GI-d was built here first and defined the locations for the outer enclosure wall and mastabas. It is much more likely that the boundaries created by these constructions defined the space and size for a pyramid as the last structure built in this area. This sets the earliest

Feature	GI-d (Khufu)	GII-a (Khafre)
Base	71' Square	69' Square
Height	Estimated 45'	Estimated 46'
Exterior Angle	51°45', essentially the same as the main pyramid	53°, essentially the same as the main pyramid
Descending Passage	39" wide, height unknown, enters chamber above floor level	41" square, enters chamber above floor level
Passage Incline	32°	31°
Chamber	27' by 10', 9' high, lined with pink plaster	25'9" by 8'8", 6'11" high, lined with pink plaster
Pyramid Volume	76,000 cubic feet	73,000 cubic feet
Internal Floor Plan (to scale) - A descending passage leads to a rectangular chamber		

Comparison of subsidiary pyramids GI-d and GII-a. Data for GI-d from Hawass 1996, and from author's measurements and calculations. Data for GII-a from Maragioglio and Rinaldi 1965:88-90.

possible construction date for GI-d to after the completion of the southern mastabas and at a time either contemporary with or slightly later than Khafre's subsidiary pyramid (GII-a). We may be seeing the same architect's hand in GI-d and GII-a. For whom GI-d was built and why a site was chosen next to the Great Pyramid is unknown and likely unknowable. Possibly it belonged to an immediate relative of Khufu who gained prominence during a later reign. Whomever it was built for, the physical evidence leads us to the conclusion that GI-d was built during the reign of either Khafre or Menkaure and was not contemporary with the Great Pyramid.

## NOTES

1. George Reisner used the letter "G" to identify Giza; the Roman numerals I, II, and III to identify the three primary pyramids - Khufu, Khafre, and Menkaure - in chronological order; and letters to identify the subsidiary pyramids. Khufu's three subsidiary pyramids were identified as GI-a for the northern, GI-b for the middle, and GI-c for the southern. I have identified the new pyramid as GI-d.

2. GI-a, b, and c were not built on a flat surface but on a slope. Therefore the length of each pyramid face is slightly different as the builders accommodated to the incline. For purposes here we measured the east-west distance through each pyramid's center.

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