



## **Egyptian Pyramids**



The three great pyramids at Giza. The largest, the pyramid of King Cheops, is in the rear. To build it required over two million large limestone blocks. The pyramid of King Chephren is in the centre and the pyramid of King Mycerinus is in front. The three small pyramids are of Mycerinus's queens. These monumental pyramids are precisely oriented to the four cardinal points. There is much speculation as to how the pyramids were constructed.

After reading the following excerpt by Anthrophoto -journalist, Wayne B. Chandler, perhaps you will have a greater understanding why the construction of the pyramids is still a puzzle.

Herodotus stated that 100,000 men constructed the Great Pyramid in a period of twenty years. Though this has been the accepted theory for several centuries in all reality it is somewhat absurd. Simple mathematics will show us why. In 20 years there are 7305 days. There are about 2,300,000 blocks of stone in the Pyramid, most averaging 2.5 tons in weight.

The accepted theory requires that at least 315 of these 2.5 ton blocks to be placed in the pyramid every day. Because of the pyramid's basic structure, its incline, etc. the ramp that they employed would have to be lengthened and heightened every day as they completed each level they worked upon!

To carry an inclined plane to the top of the pyramid at the grade of one in ten requires starting the ramp 6000 feet away in the Nile Valley. The volume of such a ramp would have been 75,000,000 cubic feet, or nearly the volume of the pyramid itself - some 88,000,000 cubic feet.

Since the pyramid would have been built more carefully than the ramp, it may be supposed that only one third of the total time was used in building the ramp. If we proportionally decrease the number of working days allotted to the pyramid by one third, only 4870 days remain, and that implies that 472 blocks (averaging 2.5 tons each) were placed in the structure each day when the work was not taking place on the ramp. Assuming they worked 12 hours a day, this means that between 39 and 40 blocks were positioned each hour, a rate of one block every 91.5 seconds! The incredible skill evidenced in a building of this pyramid would make such an effort an impossibility.

If there were 100,000 stone haulers as Herodotus reports, then we would have to incorporate several thousand more workers because stone hauling is just one facet of the workload. Thus in proportion there would have to be 100,000 quarrymen, 100,000 men pulling the stones to the barges, 200,000 sailors rafting the full and empty barges up and down the Nile, another 200,000 loading and unloading at both ends, 100,000 men building and repairing barges, sleds, ropes, etc. This list would be endless!

Ingenious masonry work was exhibited in the pyramids, especially the Great Pyramid. When archaeologists removed one of the few remaining casing stones, (the stone that at one time covered the entire pyramid) on the north side of the pyramid at its base they were shocked at what they discovered. None of the underlying blocks examined had chipped edges, cracks, or even scratches: they were perfect! In reference to the casing stones, one of the world's greatest Egyptologists, Flinders Petrie, found that the faces and butting surfaces of these 16 ton blocks were cut to 1/100 of an inch of mathematical perfection.

**Great Pyramid of Cheops (Khufu)** Built: c.2589-2566BC. Height: 481'. Base: 775 3/4' each side. Incline: 51 degrees.

Average stone weights: core two-and-a-half tons, facings four tons. Required 112 men to lift. Construction material: limestone, basalt and granite. Excavation/restoration: surveyed in early 1800s by Richard Howard-Vyse, John Perring and Giovanni Caviglia.

Notes: built from 2,300,000 blocks covering 13 acres and requiring the equivalent of 200 million man-loads (80 lbs), or 6,500,000 tons of material. The casing stones (when intact) covered a surface of 22 acres.



**Pyramid of Chephren (Khafre)** Built: c.2558-2532BC. Height: 471' (original). Base: 707 3/4' each side. Incline: 53 degrees.

Average stone weights: core two to three tons, facings six tons. Construction material: limestone and red granite. Excavation/restoration: extensively explored in 1818 by the Italian explorer Giovanni Belzoni. Surveyed shortly after by Richard Howard-Vyse, John Perring & Giovanni Caviglia.



## Pyramid of Mycerinus (Menkaure)

Built: c. 2532-2504BC Height: 218'. Base: 356 1/2'. Incline: 51 degrees.

Average stone weights: N/A. Construction material: limestone and red granite. Excavation/restoration: surveyed in early 1800s by Richard Howard-Vyse, John Perring and Giovanni Caviglia.





[cosmic]