



Great Pyramid At Giza - Star Alignment Might Determine Age

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Great Pyramid of Khufu or Cheops located across the Nile River about six miles west of Cairo, Egypt in an area called the Giza Plateau. The pyramid is 481.4 feet high, contains an estimated 2,300,000 carved stones, each estimated to weigh an average 2.5 tons.

Photograph © by Steve Beikirch.

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November 19, 2000 Cairo, Egypt - This week a Cambridge University Egyptologist from England, Dr. Kate Spence, announced a possible recalculation on the age of the Great Pyramid of Khufu or Cheops on the Giza Plateau near Cairo. She wanted to know how the ancient Egyptians lined up the Cheops pyramid so precisely north to south. She hypothesized that stars were the guide, so she used a computer to wind back time in the sky from today to about 4500 years ago. Dr. Spence found that the star Mizar, in the Big Dipper's handle, and Kochab, in the bowl of the Little Dipper, would have appeared one over the other at a point directly above the North Pole. Dr. Spence thinks that the Egyptians then hung a plumb line against the two stars to find true north for the construction of the great Cheops Pyramid. Her revised date for that construction is now 2478 B. C., give or take five years. If correct, the Great Pyramid could be 75 years older than traditional estimates.

Another professor thinks this application of computer power to refine age estimates of large ancient monuments by calculating star alignments will have a big impact on Egyptology. She is Dr. Betsy Bryan, Professor of Egyptology and Chair of the Department of Near Eastern Studies at Johns Hopkins University in Baltimore, Maryland.



Near a cluster of old step pyramids on the Giza plateau, the three great pyramids line up left to right:

Mycerinus, Chephren with some of its pale limestone cap still in place, and Cheops (Khufu).

In distant far right are small unfinished burial pyramids for the queens of Mycerinus.

Photograph © by Michael and Suzie Manley.

Interview:

Betsy Bryan, Ph.D., Professor of Egyptology and Chair of Near Eastern Studies, Johns Hopkins University, Baltimore, Maryland: "I personally think it's going to have a real large impact on allowing us to better get a precision for Old Kingdom chronology generally. I suspect we will start to see people attempting to do similar modeling for monuments built in other periods. I think we have had such argumentation in Egyptology about using doing astronomical chronology based on the rising of the star, Sirius, which we know is technically the beginning of each Egyptian civil year. But we don't know where they did it. So, what Kate has done is give us another opportunity to go back and take monuments ignoring the notion of the rise of Sirius and looking at another sighting or alignment principal that will allow us to do chronology also. So, I think you are going to see people looking for places they can apply similar techniques to

USING COMPUTERS TO GO BACK IN TIME AND SEE WHERE THE STARS MATCHED UP TO THE BUILDING OF THE LARGE MONUMENTS.

Exactly. I mean we don't know for sure how many times the Egyptians through history attempted to align monuments to true north, but I suspect that we're going to:

- a) see more people looking into that question.
- b) when they find it, they will perhaps apply her modeling principals for how they did it.

WHY WOULD TRUE NORTH HAVE BEEN SO IMPORTANT TO THE EGYPTIANS?

Well, actually to me is pretty fascinating. Because the Egyptians recognized that there were a set of stars in the sky that never set. And those are the stars that revolve around the north pole, the north celestial pole in the northern sky. That would be our Big Dipper and our Little Dipper. And so they recognized that from obviously very early on and we have references in the pyramid texts to the Egyptian king traveling up into the sky to become and join with one of the circumpolar stars. The Egyptians called them the "imperishables" because they never set. And they were aware that anything that was further south than those sets of northern stars were going to disappear below the horizon for a period of time during the year. That would essentially signal to them that these were stars that could die and then be brought back again. But the king was to become one of these stars that never ever set.

AND THAT'S WHY HE HAD TO HAVE AN EXIT THAT WOULD TAKE HIM TO THE NORTH AND TO THOSE POLAR STARS.

Exactly. So, the door to the pyramid or entrance out of the pyramid was located on the north so that the king was facing what was to be his eternal home.

WHY DO YOU THINK AS AN EGYPTOLOGIST THAT THE EGYPTIAN CULTURE WAS SO FOCUSED ON THE STARS AND SEEMED TO HAVE SUCH AN EXTRAORDINARY RELATIONSHIP WITH BUILDINGS AROUND THE STARS IN THE HEAVENS?

Well, that's a really wonderful question! It's a question that every Egyptologist would love someone to give us an explanation for. I don't know the why. I think all of us can demonstrate that it is a fact that from the earliest time that we have referential materials, there is an interest in the heavens and there is an identification of the heavens with various deities that the Egyptians worshiped. Now, whether that is because they had worked it into their religion, which they certainly did, or whether there is also a play in it as we know from later Greek constellations that the Egyptians were just trying to identify things in the heavens with something else that they knew? We really don't know the full answer to that. But the truth of the matter is that if you go all the way back and ask the question: why are they so interested in the heavens? We can only answer that we know that within their funerary religion the sky plays a major role where events will take place for eternity.

AND REINFORCED BY THEIR ALMOST OBSESSION WITH MUMMIFYING THE DEAD FOR LIVING BEYOND THE MOMENT OF DEATH.

Oh, definitely. I think the one thing anyone learns studying ancient Egypt is that they had a notion of the cosmos as a cycle. Everything continues and the mummification process is part of that. Death is not the end. Death is a transition. The same is true in watching the sky. The Egyptians were well aware that throughout the year, the stars that were visible in the heavens were not in the same exact place from day to day. And yet, they also knew that the same sets of stars were going to reappear next year at the same time. And very early on, they developed very intricate sky maps that would indicate which groups of stars were visible in Egypt at different times of the year and they used them to make their calendar with. So, it is the cyclicity of it they could use for marking time - and I mean time in a true sense, but also a really eternal sense that the Egyptians were taken with.

NOW, ROBERT BAUVAL AND JOHN ANTHONY WEST AND OTHERS HAVE WRITTEN BOOKS PROPOSING - AND I THINK ROBERT TEMPLE WHO DID THE SIRIUS MYSTERY ON YET ANOTHER SET OF STARS CONCERNING THE DOGON TRIBE IN AFRICA - THEY HAVE PROPOSED THERE WAS ALL OF THIS FOCUS FROM THE SUMERIANS AND EGYPTIANS AND PERHAPS THE GREEKS ON CERTAIN STAR SYSTEMS BECAUSE OUR ANCESTORS MAY HAVE BEEN FROM SOME OTHER STAR SYSTEM. AS YOU STUDY ANCIENT EGYPT, DO YOU FIND ANYTHING THAT WOULD SUGGEST PERHAPS THIS IS A SEEDED CIVILIZATION PLANET?

You know, when I get asked a question like that, I'm always surprised because the ancient Egyptians despite what we might call obsession with preparations for the afterlife are the most down to earth people in what we can tell from their text and inscriptions they have left and their representations of themselves they have left us. These are people who just loved life and the fact that they were interested in what was going to happen to them after death is only part of their world view that meant they wanted to have some control or to predict some kind of control over what was going to happen to them later on and that is as human as it can be.

There is no over concern at all, in my opinion, of the Egyptians with the sky. The skies are practical in the sense that they are brought into their explanations for understanding the movement of time and the year and sun from one horizon to the other horizon. It would be difficult for me to understand why anyone

would not want to see the Egyptians as not being as human as anybody. They have these wonderful texts where they talk about how they worry if their funerary religion is valid, whether it really means they are going to live forever just because they build a tomb and fill it with treasures. They are just normal human beings."



The Sphinx faces due east with the Cheops Pyramid in the background at the Giza Plateau. Its age and creator are still unknown. By 1500 B. C., the Egyptians referred to it as Hor-em-akht, Horus in the Horizon. Photographer anonymous.

Geologist Reports Sphinx Has Water Erosion Dating Back 7,000-9,000 Years Ago

Near the great Cheops pyramid is the mysterious Sphinx, a statue with the body of a lion and the head of a human. Its age and creator are still unknown. A geologist, Robert Schoch, Ph.D., at Boston University recently spoke before the Geological Society of America about his research at the Sphinx which convinced him there is water erosion that must date back at least 7,000 to 9,000 years ago, or around 5,000 to 7,000 B. C. That would make the Sphinx nearly twice the age of the Cheops pyramid. But Dr. Kate Spence's star alignment work does not bother him because he and others are coming to the conclusion that the Cheops pyramid was built long after the Sphinx.

Robert Schoch, Ph.D., Assoc. Professor of Science and Mathematics, College of General Studies, Boston University, Boston, Massachusetts: "It's very clear that the origin of the Sphinx goes back before Old Kingdom times, before Khufu (Cheops) who is the traditional builder of the Great Pyramid on the Giza Plateau. And the work we've been doing is pushing all of the Sphinx back well before that time in a moister, more temperate, rainier season before the hyper arid regime of the current Sahara Desert which comes in about 3000 B. C. or slightly later.

My best estimate now is about 7,000 to 9,000 years ago, or 5,000 to 7,000 B. C. But let me say, I'm open that it could have its origins even earlier than that. To push its origins any later than about 7,000 years ago, or 5,000 B. C., becomes problematic given the nature of the geology, given the nature and degree of the weathering that we see on the original body of the Sphinx.

WHAT IS THE STRONGEST PHYSICAL EVIDENCE YOU HAVE TO SUPPORT THAT HYPOTHESIS?

I would say two things:

1) One is the nature of the surface weathering and erosion or we could call it degradation. Not just the degree but the nature which we can correlate with the

ancient earlier climates.

2) The seismic studies we have done of sub-surface weathering under the Sphinx, under the base of the Sphinx which allows us to calibrate how long that weathering has taken place. Again, we're dealing in our calibrations, depending upon what assumptions you make, I'm taking a conservative approach more or less looking at it has to be so old - not what is absolutely the oldest it could be.

BUT THIS WORK OF KATE SPENCE AT CAMBRIDGE UNIVERSITY ABOUT THE DATING OF THE PYRAMID OF GIZA AT ABOUT 2,478 B. C. IS REALLY NOT IN CONTRADICTION WITH YOUR WORK ON THE SPHINX BECAUSE THERE MIGHT NOT EVEN BE ANY CONNECTION BETWEEN THE SPHINX AND CHEOPS?

Right, I don't think it is in contradiction at all. I think you just said very nicely there may not be any connection between the Great Sphinx and the Great Pyramid. I think if there is a connection between the Sphinx and any pyramid, I think the second pyramid is actually a secondary structure built on something else at that same site and that something else I suspect is related to the Great Sphinx in time and conceptually.

THE PYRAMIDS WERE BUILT ON TOP OF PRIOR PYRAMIDS WHERE THE GREAT PYRAMID OF GIZA IS CURRENTLY AND THOSE UNDERNEATH MAY BE CONNECTED TO THE SPHINX. AND THAT LEAVES THE HUGE MYSTERY: WHO WAS AROUND 7,000 TO 10,000 YEARS AGO.

What was going on? And you said the pyramids built on prior pyramids. I don't know for certain that they were pyramids or platforms of other structures. If I can mention one other thing, we - being John West and I - when we were in Egypt this past summer, we spent some time at Dashur where there are also pyramids, and particularly the so-called Red Pyramid or North Pyramid. And that illustrates exactly the same point. You go into the Red Pyramid at Dashur which is traditionally is considered to be slightly older than the Great Pyramid at Giza.

You go into it and go through the corridors and go into one chamber and then into another chamber, all classic Old Kingdom chambers, Old Kingdom pyramid, Old Kingdom masonry. No problems there. Then you go into another chamber, and you are just struck. It is totally different style made of very different style blocks of larger blocks. They have the aspect of being more roughly hewn. They seemed to be weathered and I think weathered in such a way they would not be weathered once enclosed inside a pyramid. And you're in this chamber. It's incredibly dramatic once you realize what you're looking at and then you look up and see this beautiful corbeled roof over the chamber which is clearly in a different style. Beautifully dressed, smooth rocks that are not weathered, seems to be classical Old Kingdom style.

Bottom line I think this is another case where we have credible evidence that the pyramids at Dashur in Old Kingdom times was built over and around and enclosing a much older structure and they were reusing something that in my opinion was very sacred or important to them in Old Kingdom times. And that something would have gone back to a much older period that you can generally call a Sphinx Age.

WHO WERE THE BUILDERS THEN OF THE SPHINX AND THESE OTHER MUCH OLDER PYRAMIDS?

That I can't tell you at the moment. I think that the fact we are establishing that the Sphinx is older and there are other structures that are older, too. We're making headway, we're making progress in our studies. But I really at this point

can't tell you who these people were or what their culture was.

OR WHERE THEY CAME FROM.

Or where they came from. I'm hoping someday we can. Right now, I just think of them as named after the Sphinx as the Sphinx Culture or Sphinx Age. But that's just a handle, it's not really telling us anything."



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