

Triton Fun Company

Science Newsletter February 2007

# Science Newsletter

## February 2007

### In Search of Ancient Astronomers

D. P. Green

#### Special points of interest:

Ancient Astronomy

Great photos !

Triton Fun stuff

Superfluous questions

**In March** of 2006, I had the good fortune to go on a Mediterranean cruise with over 1,000 other astronomers. We were going to see the total solar eclipse in Tobruk, Libya. One of the astronomers on the trip was Dr. Edwin Krupp of the Griffith Observatory in Los Angeles. Dr. Krupp gave a few lectures during the days we spent at sea. These lectures usually related to the ancient cultures that lived in the countries we were about to visit, such as the Greeks, Romans, Egyptians and other peoples of the Mediterranean region. One of the things that struck me about these cultures was how attuned they were to astronomy. One of the features Dr. Krupp told us to look out for was one I would surely have missed: The great sundial in the Temple of Apollo at Pompeii, in Naples, Italy. This sundial is quite tall, and from a distance looks simply like a building column (of which there are many in the area). It is only upon careful examination that one can see the carefully rounded bowl of the sundial at the top of the column, with the central needle that would have been used to cast a shadow for the proper hour. Why did the residents of Pompeii build the sundial so high? Some people surmise the sundial was built so tall to honor Apollo, the sun god, whose temple the column is a part of. Some think that it may have allowed passersby to tell the time

from a distance. We may never know, as the city was destroyed by the eruption of the volcano Vesuvius in 79 AD.

Another interesting site was the great archway at the entrance to the ancient Roman city of Leptis Magna, near Tripoli, Libya. This fascinated me, as, although I knew the Romans had settled far and wide, I never knew they had established cities across so much of Africa. This archway is a four-sided structure, built aligned along the cardinal directions. What makes it astronomical? Simply put, it implies the ancient Romans had an understanding that the Earth has north and south magnetic poles, and that it rotates around its axis in an east-west direction.

The Great Pyramid complex at Giza was perhaps the most famous site we visited on this trip. People have long surmised many astronomical meanings for the layout of the pyramids, including one theory that the pyramids are intended to reflect the stars on the belt of Orion in the constellation Orion. However, Dr. Krupp said that theory has been discredited, as the pyramids are not truly aligned in the same manner as the belt stars. I had always thought these pyramids (among them the Great Pyramid of Cheops) were the only pyramids



and was surprised to learn that there are over 110 pyramids in Egypt. All three pyramids of the Great Pyramid complex are aligned according to the cardinal compass points! So the ancient Egyptians of 2500 BC were aware of the Earth's rotation and poles. Two interesting non-astronomical facts about the Great Pyramid complex are: a) I had always imagined the pyramids were in the middle of the Sahara, far from civilization, while in fact, they are in the center of Cairo, and loom over the city much as skyscrapers loom over modern cities. It was strange to be in the middle of the largest city in Africa, and see these ancient buildings towering over the otherwise modern city. b) For some reason, I thought the Pyramids were on one side of the Nile and the Sphinx was on the other. Rather, the Sphinx is in the same complex as the Great Pyramids, as you can see from the accompanying picture. Talk about a great photo-op!

We are always looking for contributors to the Science Newsletter. If you would like to write an article about a science subject you are excited about, or contribute a superfluous question, or if you would like to be on our mailing list for future newsletters, please e-mail us at:

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**Ancient Astronomers, continued**  
(Photos: D.P. Green and L.P. Green)

Great Pyramid complex  
at Giza, including the Sphinx



Sundial at the Temple of Apollo  
At Pompeii in Naples, Italy



Great Archway at the entrance to the ancient Roman city of Leptis Magna, near  
Tripoli, Libya



Although I did not visit it on this trip, Stonehenge - the mysterious monument on the Salisbury Plain in south England - has always held great astronomical fascination for me. In 1963, British-born astronomer Gerald Hawkins wrote a book called "Stonehenge Decoded." In this book, he claimed to have figured out that Stonehenge contained a large number of astronomical alignments. In fact, he claimed, Stonehenge may have been used to predict eclipses! (Wikipedia) Although scientists now think that many of Hawkins' claims were overstated, no one really knows why Stonehenge was built or what it means. It remains an enigma, both archeologically and astronomically.

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\*\* Send us your superfluous questions for a future issue ! They can be on any subject. The funnier, the better. M.D., our editor, appreciates the help and will send you a free Triton Fun coffee mug as compensation for your question. Or write an article for us and be read by professional and amateur astronomers and scientists in the U.S. and Canada ! \*\*

## Superfluous Questions:

1. Our galaxy, the Milky Way, is classified as what type of galaxy ?  
a) Elliptical    b) Nebular    c) Spiral    d) Irregular
2. Which of these instruments flew on the Voyager spacecraft to the Outer Planets ?  
a) Context Camera    b) Composite Infrared Spectrometer    c) Low Energy Charged Particles    d) High Energy Neutron Detector
3. Where is Yerkes Observatory ?  
a) Mt Hamilton, California    b) Westford, Massachusetts    c) Williams Bay, Wisconsin    d) Toronto, Ontario
4. How many bones are there in a giraffe's neck ?  
a) 10    b) 24    c) 12    d) 7

—> ANSWERS in next months issue of the Science Newsletter ! <---

\*\* ANSWERS to January's Superfluous Questions: 1. c) Nov 5, 1955 2. c) flux capacitor 3. a) Hill Valley 4. c) a Delorean