

**EXPLORERS CLUB**  
**FLAG 71 REPORT**  
**OSIREION RESEARCH PROJECT**  
**ABYDOS, EGYPT**  
**MAY, 2007**

**JAMES S. WESTERMAN FN98**



## Introduction

In May, 2007, James Westerman FN98, in conjunction with Bahay Issawi assembled and lead a team of researchers from Pennsylvania State University, USA, and Sohag University, Egypt, to follow up on the research he did in 2004 (see Flag 61 report from September, 2004). This season's work was awarded Explorers Club Flag 71.



Osireion Research Team: left to right: Shelton Alexander, James Westerman, Bahay Issawi, Richard Parizek. Alexander and Parizek are from Pennsylvania State University.



In 2004 the channel on the eastern side of the central island of the Osireion was probed. During this probing the physical limit of the probe was reached at 8.4 meters (27.5 ft.) below the level of the floor of the central island without reaching the foundation level of the structure. This season we had five objectives in our research. The first was to use a longer more efficient physical probe to try to reach the depth upon which the foundation of the Osireion rests. The second was to use seismic equipment to also try to determine this depth. The third was to use the seismic equipment to study the physical characteristics of the central island to see if it was solid masonry or contained voids. Fourth we wanted to use the seismic equipment in conjunction with shallow piezometers to determine if there was water flow from the Osireion to the east passing beneath the Sety I Temple. And finally we wanted to prepare a detailed topographic survey of the Osireion/Sety I Temple area to accurately determine the water levels in the Osireion and the well in the first court of the Temple.



Osireion Research team members: Omer Adly and Abdel Moneim from Sohag University.

This season's work:

1. Physical probing in the eastern channel.

In order to more effectively probe in the eastern channel of the Osireion Mr. Westerman had brought a 5/8" (1.59 cm) diameter tile probing rod kit which had the potential to measure up to 40 ft. (12.2 m) in depth. Using this probe he was able to reach 34 ft. (10.4 m) below the level of the central island. At this depth the probe became lodged due to the cohesive force of the silt in the channel which surrounded the probe. The probe did not feel as if it had hit a solid foundation layer at this depth. It was not possible to probe to a greater depth using the manual equipment.





## 2. Seismic study of the depth of the Osireion.

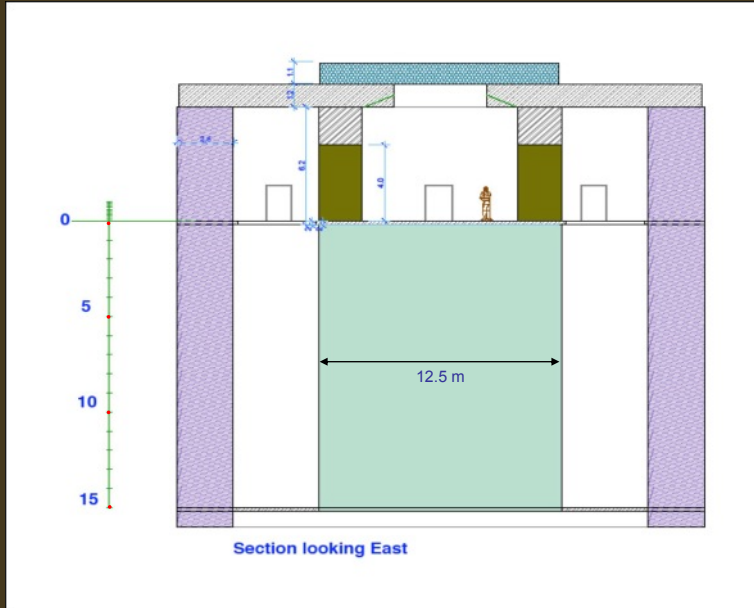
Dr. Shelton Alexander of Pennsylvania State University had brought to the field from the United States a Geometrics Strataview seismic testing rig consisting of a recorder and a series of probes. Using this equipment Dr. Alexander conducted a series of readings in the Osireion as well as in the first and second courtyards of the Sety I Temple. A detailed report of his findings is attached as Appendix I.



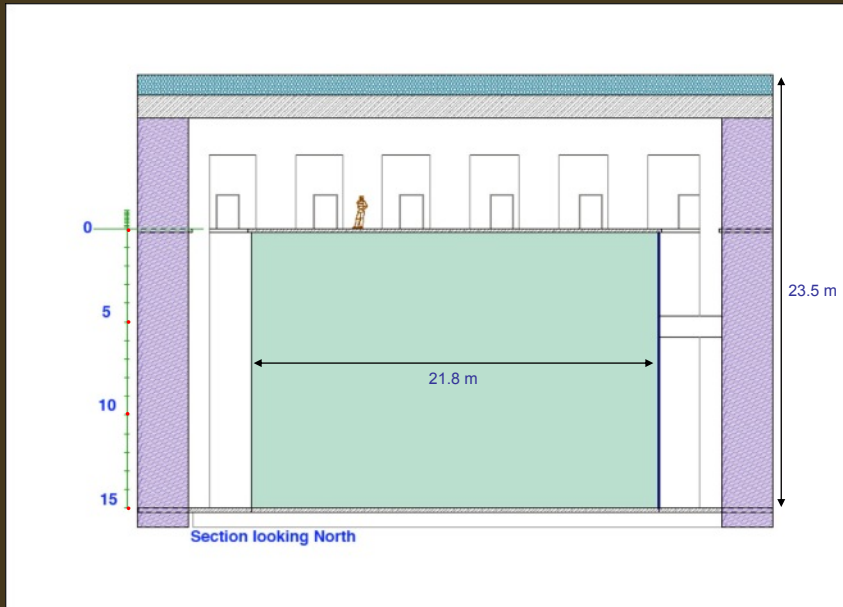
The results of his research was that the foundation level of the Osireion is approximately 15 meters ( 49.2 ft.) below the level of the central island. Portraying this graphically shows the following:

All dimensions are shown in meters

### North / South Cross Section

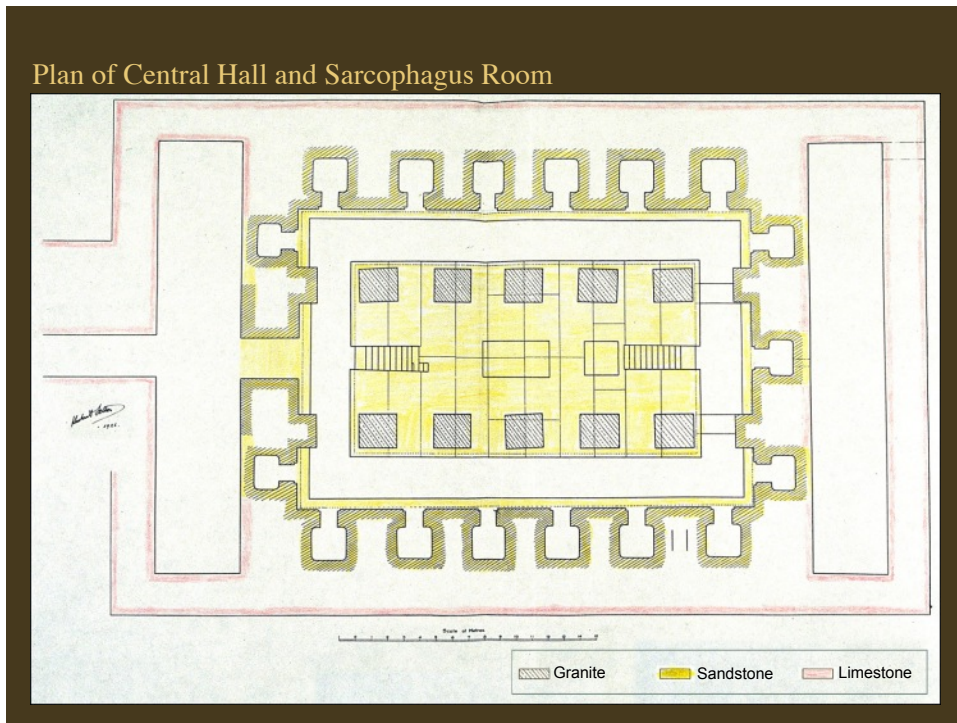


### East / West Cross Section

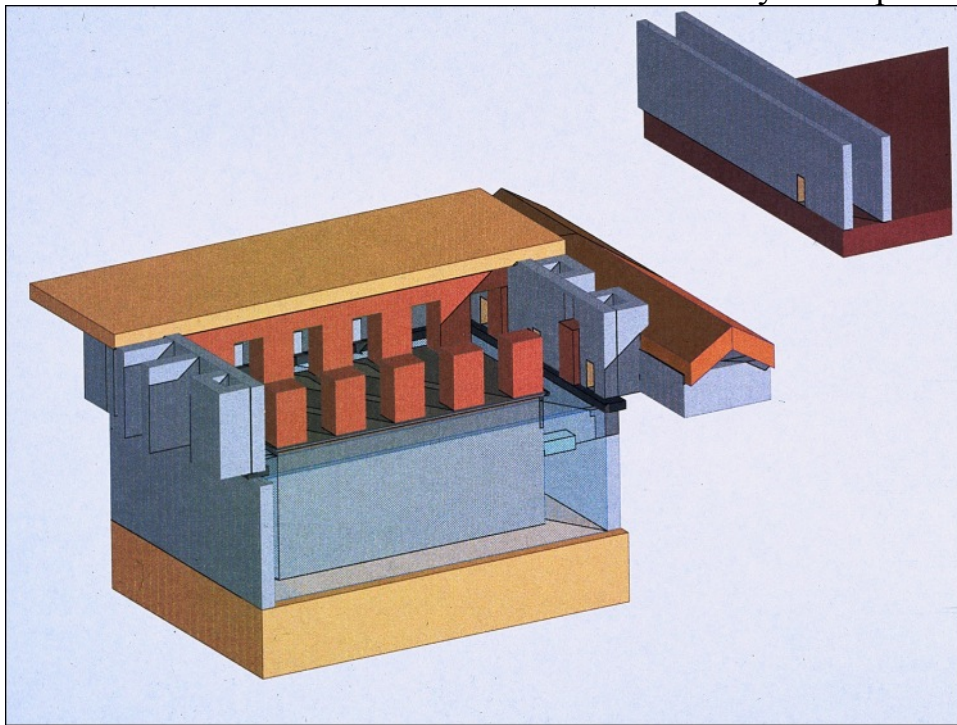




Plan of Central Hall and Sarcophagus Room



Isometric view of Osireion and west side of Sety I Temple



View is looking northeast

3. Structural characteristics of the central island of the Osireion.

Using the seismic equipment Dr. Alexander was able to determine that the “high degree of variability of signal levels and waveforms as the sources [shock impulses] are moved only short distances on the Osireion surface strongly indicates that the interior of the Osireion is highly heterogeneous, not a solid block of material.” This means that there are apparently some sort of voids or cavities in the interior of the island.

4. Was there water flow from west to east coming from the Osireion?

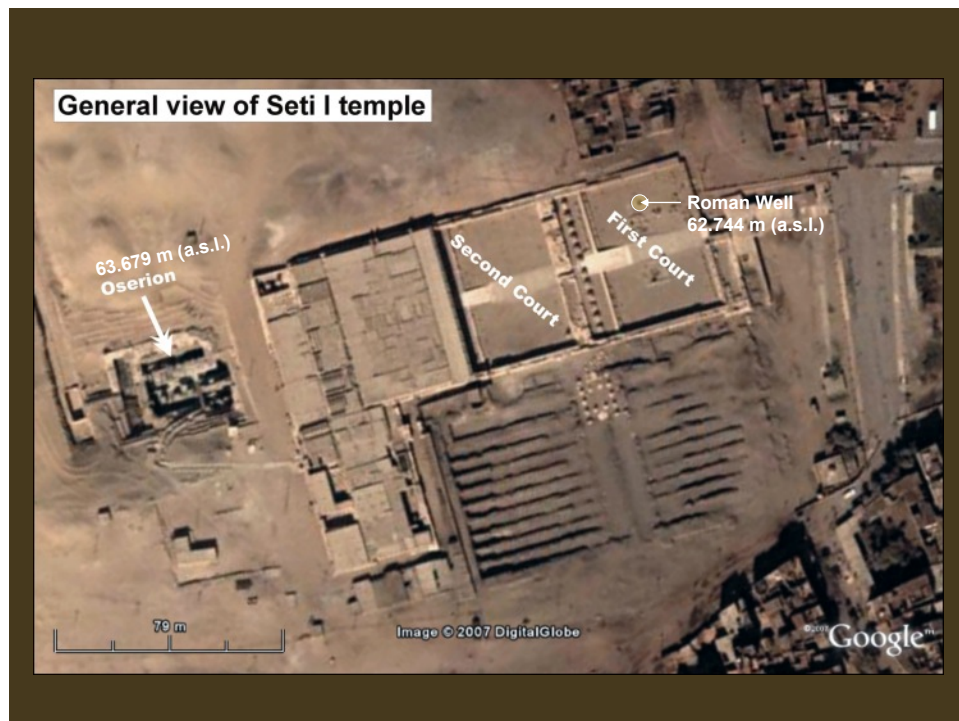
Dr. Richard Parizek from Pennsylvania State University conducted a series of tests using shallow piezometers in conjunction with seismic readings and topographical mapping to determine conclusively whether the water in the Osireion was flowing beneath the Sety I Temple. (See Appendix II). He determined that there was water flowing from the Osireion towards the east in some sort of underground passage going beneath the Sety I Temple.





## 5. Topographic survey of the Osireion/Sety I Temple area.

Drs. Adly Omer and Ahmed Moneim did a detailed survey of the areas mentioned above (see Appendix III). The most significant finding of their survey was that the water level in the Osireion at 63.679 m.a.s.l. was nearly one meter higher than the water level in the well in the first court of the Sety I Temple at 62.744 m.a.s.l. confirming that the flow of water must be from west to east as water cannot flow uphill.



We also studied the relationship between the Osireion and the Sety Temple. Our findings that the central hall is 15 meters deep means that the Osireion had to have been built before the Sety Temple. This is because the hole in the desert that would have been needed to be excavated if they were built together would be so wide due to the angle of repose of the desert sand that it would have undermined the Sety I Temple.


### The Temple and Cenotaph at Seti I at Abydos



Another issue raised by the 15 meter depth of the Osireion central island is just how old is this part of the building? It is my opinion that the Osireion is resting on a very firm foundation as it truly has stood the test of time. The central island is perfectly flat and the massive granite columns are still perfectly in plumb. In order to lay such a firm foundation it is my opinion that the water was diverted in antiquity by the builders. According to geologist Bahay Issawi, studies have shown that the Nile river bed has risen approximately 15 meters over the past six thousand years. If the water level in the Nile Valley was 15 meters lower during the time of the laying of the foundation of the Osireion, that could mean that the possible time of the construction of its core foundation was between five and six thousand years ago. This could make it among the oldest if not **the** oldest stone building in the world. The core structure of the Osireion was probably added onto and modified over its useful life.



In summary it will be necessary to do further research in order to answer many of the fundamental questions raised by this season's work



### Questions Remain

- Why was the Osireion built?
- When was it built?
- Why was water incorporated in the design?
- What is the source of the water?
- How was it built?
- What, if anything, is in the cavity in the interior of the island?

We have received permission from the Supreme Council of Antiquities (SCA) to continue our research in 2008 and we hope to gather more information which will answer some of these questions.

For the 2007 season we wish to thank the Supreme Council of Antiquities for allowing us to do our research most notably our inspector Sayed Hammam, as well as Aziza El Sayed from the Balyana Office, and Makdy El Badry and Zein El Abdeen from the Sohag Office, as well as the Director of the SCA, Dr. Zahi Hawass.