

**Synopsis**

Archaeologists attempt to understand the human past through analysis of material culture. Material culture pertains to any physical remains that were used by humans. In my research, I am looking at artifacts in the USC Archaeology Research Collection from ancient Gandhara, now part of modern-day India, Pakistan, and Afghanistan (see map) which date back to the 2nd Century CE.

Through state-of-the-art laboratory analysis, archaeologists are now able to develop an enhanced perspective of the artifact. I have utilized PTM, or Polysynthetic Texture Mapping, technology in order to develop a high-resolution image which can be manipulated digitally to see minute characteristics of the artifacts not visible to the naked eye. I have also taken detailed images of the artifacts with the help of the Meiji Binocular Stereomicroscope in order to view unique characteristics in the composition of the stone used in the artifacts. Additionally, in preparation for publication, the PTM images of the artifacts will be available to the public through the internet, which allows remote users to fully utilize the artifacts without having to visit the research collection. These images are presented through InscriptiFact, a free software developed in part by Bruce Zuckerman, Ph. D., USC Department of Religion, in conjunction with West Semitic Research (WSR), University of Southern California (USC) West Semitic Research Project, the University of Illinois (UI) Ugaritic Texts Digital Edition Project, and the Hewlett-Packard Company.

I have also combined my laboratory analysis with in-depth research of the area in order to understand the cultural context of the artifact. The importance of artifact lies not only in the physical aspects of the object, but also in its cultural context. The artifacts in the USC Archaeological Research Collection are directly associated with Siddhārtha Gautama, an ancient king who renounced everything he had in order to gain enlightenment and end suffering. Gautama eventually became known as the Buddha, or “Awakened One.” Because my research combines literary and scientific analysis, it not only provides a thorough explanation of the composition, age, and the methods of creating the artifacts, but also what these artifacts represent.

**Material**

The artifact was identified to be made of schist, a metamorphic rock formed by thin layers of compressed minerals.

- **Schist** is a term derived from the ancient Greek word meaning “split” because of its layered appearance.

- A high-resolution image from USC ABC’s Meiji microscope provides further validation for the composition of the artifact, when compared to known samples of schist.

**Characteristics**

The artifact is a Buddhist stupa panel. The depiction on the panel is associated with Cantos XV and XVI in *Life of the Buddha*, in which the now enlightened Siddhārtha Gautama goes to various ascetics and proclaims to be the Buddha. The panel depicts three separate scenes from left to right. 

1. The Buddha (left) walks with the ascetic’s hut alongside his assistant. The second scene shows the ascetic seated inside a straw hut, speaking to the Buddha and his assistant.

2. The ascetic has three main features which signify sages in Buddhist iconography: the upper half of his body is unclothed, a cloth is wrapped around the lower half of his body, and he is carrying a kamandalu (water container) in his left hand. The final scene shows the ascetic conversing with another ascetic, as evidenced by their gāthas and kamandalus in their left hands.

**Age**

2nd - 4th Century CE

**Significance**

The main issue that this project aims to solve is the preservation of Gandharan Buddhist culture for future generations. Buddhist material culture in Gandhara is under attack and many of the artifacts and sites in the area have been destroyed due to internal conflicts and ideological differences. The most devastating loss in Gandharan Buddhist cultural heritage was the destruction of the Bamiyan Buddha statues by the Taliban-led government in Afghanistan in March of 2001 (see above photos). Measuring 114 and 165 feet in height, the Bamiyan Buddhas were the two largest depictions of the Buddha in existence before they were destroyed. In addition, the Afghan government destroyed almost all of the Gandharan Buddhist artifacts stored in museums and warehouses throughout the country.

As archaeologists, it is our civic duty to serve as guardians of the past and to protect the legacy of our ancestors. I am helping preserve the Gandharan Buddhist culture by cataloging and providing digital replicas of these artifacts to the public, at no cost to them, through the assistance InscriptiFact Project. The PTM technology that I have learned in the lab can also be used in the field, so I can utilize my skills to catalogue artifacts in conflict-prone areas before they are destroyed.

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