

A Progress Report to the American Institute of Indian Studies (AIIS) on the Archaeos  
Mapping Project at Vijayanagara, India for the Year 2003

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This report describes the progress of our research through the end of the 2003 field season at the medieval city of Vijayanagara—also known as *UNESCO Site 241:Group of Monuments at Hampi*.<sup>1</sup> The research described here was conducted and financed by Archaeos, a non-profit research organization based in New York City; the project is currently under the direction of Dr. David Nelson Gimbel and Dr. John Fritz.

### **Overview**

During the 2003 field season, the project continued its initial focus upon the mapping of two separate archaeological areas, the North Ridge and the Noblemen's Quarter, utilizing state of the art surveying technologies and computers in conjunction with digital photography and digital video. The overall aims of the project have been:

- To capture and record as much archaeological data as possible.
- To develop, encapsulate, and preserve that data in such a form that it may eventually be used both by for future researchers and for more generalized educational purposes relating to India's history.
- To record the actual process of mapping and working at the site so that our methodological practices will not be shielded from the scrutiny of future researchers.

### ***1. The North Ridge***

The topographical feature known as the North Ridge, which is the project's primary area of physical interest, covers approximately 4-5 square kilometers of the site and is centered between 'Royal' and 'Sacred' precincts, or areas, of the urban core. In this area important historical remains have already largely disappeared due to human pressures upon the archaeological environment. One component of Archaeos' ongoing project is to record any surviving information that is visible on the surface of the North Ridge. The project focuses upon recording surface remains and no excavation is conducted by the project. The aim is, instead, to map and to register, by means of physically 'non-intrusive' practices, the extensive building and habitation remains that are currently visible. This is accomplished utilizing a combination of state of the art surveying and data collection techniques, digital photography, and digital video.

### ***2. The Noblemen's Quarter***

The work in the Noblemen's Quarter, like that on the North Ridge utilizes the 'non-invasive' techniques described above and in previous reports. The focus in this area is to document and to model, by means of three-dimensional surveying techniques, a series of buildings that have been fully excavated and conserved by the Archaeological

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<sup>1</sup> Many of the methodologies employed, as well as the results of previous field seasons, are discussed in greater detail in our previous reports to AIIS.

Survey of India (ASI) and by the Department of Museums and Antiquities of the State of Karnataka (MASK).

### **Results**

Archaeos' mapping the North Ridge at Vijayanagara was conceived of partially as a test project. One of its aims was to see what differences new technologies of mapping could bring to augment the methods being used by the Vijayanagara Research Project during their 1:400 mapping project conducted during the 1980's. Another was to see if the study of previously unmapped areas would bring information that would significantly alter the previous views of the settlement patterns or spatial layout of the city.

One of the results of the 2003 field season was the completion of tracing and digitalization of the Vijayanagara Research Project's 1:400 maps—created in the 1980's under the direction of Dr. John Fritz—into a CAD (Computer Aided Design) format. The digitalization of the maps relevant to the survey area of the Archaeos Mapping Project at Vijayanagara means that we will now be able to model 3-dimensional topographical data in order to show how it correlates to the architectural surface features that we have been mapping. This can now be done via two methods that we expect to undertake during 2004-2005:

- Overlaying the information gathered by the Archaeos Mapping Project at Vijayanagara onto a layer representing the original contour drawings
- Extracting the elevations and topographical coordinates from the original maps in order to create Digital Terrain Models—a more complex form of topographical analysis and modeling.

One significant result of the digitization of the Vijayanagara Research Project's 1:400 into CAD format has been that it is now much easier for us to understand the results of the newer Archaeos Mapping Project at Vijayanagara. A comparison between the original 1:400 maps of the Vijayanagara Research Project and Archaeos' newer maps definitively shows that Dr. John Fritz was correct in his premise that the North Ridge was much more intensely populated than the original survey maps indicated. The numbers and the massing of architectural and other cultural remains along the surface of the North Ridge, continue to affirm one of the most significant conclusions of our project over the last several seasons, namely that there was dense urban development along the North Ridge. The many features that the project has now mapped can now be understood as the remains of coherent structures and indicators of economic and social activities. These are the remains of a densely populated area that should be considered to have been a central part of the urban core, a result that is hardly surprising given the position of the North Ridge, which is situated directly between the royal, walled complex known as the *Zanana* Enclosure and the outer fortification walls of the Royal City.

The primary focus of Archaeos' surveying along the North Ridge of the City during the 2003 field season was to map large portion of the southern face of the major fortification wall along the ridge's North side. This task is important for two reasons: 1) to delimit a fixed perimeter for the remaining portion of the survey area along the western portion of the North Ridge; and 2) to define a large accurately mapped feature that corresponds directly to a visible feature on the older VRP 1:400 maps. The importance

of this second task is that it will allow us to accurately “key-in”, or overlay, our newer maps—which show only man-made features—onto the topographical features of the VRP maps. It also serves as one form of determining the accuracy of the earlier maps, which were hand drawn using a much earlier form of optical surveying.

In addition to the continued surveying along the North Ridge, a large percentage of our effort in that area was directed towards further documenting features discovered during the previous seasons by means of an intensive campaign of digital photography that included both ordinary “still-shots” and 360-degree panoramic view that are “stitched” together using the computer by means of QTVR (Quick Time Virtual Reality). These panoramas are an important form of documentation because they are extensive and interactive in nature; they allow the viewer to move through space on the computer panning and zooming in and out on any particular feature within the circumference of the original camera’s view. We have now completed and modeled QTVR shots from all of our surveying stations, which means that they visually cover the entire completed survey areas on the North Ridge, as well as in the Noblemen’s Quarter.

Approximately half of the field season was directed towards continuing to map the buildings within the Noblemen’s Quarter.

#### ***Future directions of research***

As Archaeos continues to work at Vijayanagara and to enhance its mapping and data collection capabilities, it will become possible to reach successively better levels of understanding of the spatial organization of the medieval city and its functioning. It may eventually become viable to extend the area of research to other portions of the ancient city. One possibility is that within successive seasons of work the surveying will eventually be extended westward in order to link the surveyed area of the North Ridge with the building complexes that we are currently engaged in mapping within the Noblemen’s Quarter in 3-D.