Title Card:
Vijayanagara: the "City of Victory"
Part 1: Mapping the Surface

Card 1:
produced by David Nelson Gimbel and Jessica Glass for Archaeos, Inc.

Card 2:
Vijayanagara was the Hindu capital of Southern India from the mid-14th Century until 1565.

Card 3:
In 1565 the vast and opulent city was invaded and sacked by the armies of the Deccan sultan and his allies to the North.

Card 4:
Today the area and its stunning monuments are listed as a UNESCO World Heritage Site.

Card 5:
 It is estimated that the medieval city once occupied between 300 and 500 square kilometers. Parts of it, including several of its temples, are still in active use or have been re-purposed by local inhabitants.

Card 6:
And many of the architectural remains are still partially or fully buried, unexcavated and unmapped.

George Michell:
Prior to Vijayanagara, that is before the 14th Century, all we have here are individual temples- great monuments with great sculptures. We have no idea of the whole of South India in terms of art history. At this place suddenly we have an imperial center which brought together all of the resources of South India, and all of the development of South Indian art afterwards was affected by this center. This really is the changing direction of the whole of South Indian Art. It occurred right here at this city.

When we began 21 years ago there were no maps, no drawings, no photographic collection. This was a sort of undocumented site and we believe, as do many of the visitors today, that this is one of the most interesting, spectacular, huge ruin/cities- one of the most interesting that we have here in India- and we thought it was well worth at least one season of drawing and mapping and measuring. We got some materials together for a magazine, and at the end of the season we had the feeling that we just started the work and we should come back. And so this went on for year after year and here we are 21 years down the road still with work to do.

H.T. Talwar:
We have religious structures. We know very well about the religious structures. But something we are lagging in: to understand the secular buildings. So for that, we have taken up excavations to know about the secular buildings at the site.

John Fritz:
The whole metropolitan area is 650 square kilometers. It's absolutely huge, to the horizon. You look at the horizon and that was the city. A site as vast and diverse as this has many little puzzles to solve.

David Gimbel:
That's a POB.

John Fritz:
And this will be a POE.

David Gimbel:
Hold on a second John, I just want to re-level.

We are creating a mark for the station coordinates so that we'll be able to find it again in the future.

Usually we try to locate our station points where we can get maximum visibility, and obviously that's going to be on the highest point that we get in the surrounding area.

Andy Leung:
David just has taken a GPS reading of the first point but he looks really baffled!

John Fritz:
This stuff is lime powder mixed with water, which we are painting the walls and other features around the site that we are going to be mapping.

-(Women speaking in Kannada)-

David Gimbel:
I think since we got here we've measured about 50,000 square meters, which given the level of detail that we're getting here is quite a lot of space.

G.L. Satish:
Second point, baby!

John Fritz:
The first thing we'll understand is an archeological question: what are the nature of the structural remains that exist on the surface now, today? What's left of Vijayanagara City? It was destroyed 450 years ago, now what's left? The second question would be to try and figure out what these buildings were used for. How were they planned? What size of

complexes were they building and what did they do in them? We won't always come up with very clear answers to those kinds of questions, but if we get a sense of the size of the walls that were used in their construction, these will give some guesses about how they were used.

Documenting the city helps to prove that certain kinds of areas were used by elites and other kinds of areas were used by poor people in certain kinds of systematic ways.

David Gimbel:
If you imagine this rod as being a huge pencil, what Satish is doing now is drawing the line that's gonna appear in the CAD program so- (ACH!)

Jessica Glass:
Start that over…rolling.

David Gimbel:
You can essentially think of the rod as being an enormous pencil; so essentially what the person is doing out there is they're drawing lines in space, which later you are going to take and you're going to put into a Computer Assisted Design program and you're going make this drawing with. So the more complex the set of features you are recording, the better a rodman you need.

Ok this is the POE.

The rod has to be held perfectly straight. If you imagine the prism as being a kind of static point in space, imagine a plumb bob dropped off of it; if the rod isn't level then actually the measurement that you're getting is not directly below it, it's at another point.

Got it!

-(Man speaking Kannada)-

There are two basic types of shapes that we're drawing – one is closed polygons which can be squares, rectangles, eight-sided objects, twenty-sided objects, four hundred-sided objects but that close in terms of shape. And then what we're calling open polygons: those are essentially lines that can bend in all sorts of different types of directions or curve or do whatever they want, but which don't close up into a closed form. Because we don't have intact buildings we tend to survey most of the walls as open polygons because they are lines reaching out into space, but we don't know whether the point at which they're ending is the point at which the wall actually ended to begin with.

You need to know how to use a theodolite or in this case a total station; you need to know how to use the data collector and then you need to be able to plot the points eventually when they're exported from the data collector- onto a computer, into a CAD program which is a computer assisted design program.

Ian Stell:
POB, WADF, east side buried.

David Gimbel:
Essentially the way that this machine operates: there's a small sighting arrow, and then once it's aimed more or less on the rodman, there's a set of crosshairs within the optical part of the instrument that are used to focus on the prism, and then the machine sends out a light beam which is reflected off of the prism and which bounces back and gives us all the measurements.

Ian Stell:
POE!

G. L. Satish:
Last point.

John Fritz:
One of the great things about this method is that you can map in two dimensions, so each of these points has a vertical as well as a horizontal component.

David Gimbel:
Every single shot that we take with instrument gives us a vertical measure, a horizontal measure, a slope distance…and it also gives us the coordinates in northings and eastings. So that information can be used and translated by both the data collector and eventually by the computer in any kind of way that we want.

Ian Stell:
PPT!

George Michell:
With the plotting, 3-dimensional work that can be done with a computer we're able to go back into certain areas and do much more detailed mapping and able to correct some of our earlier mapping schemes, and also to make aerial views and 3-dimensional, sort of rotational diagrams of certain buildings and parts of the site, which of course was not possible with our previous work. So it opens up to us a whole new way of looking at the site and recording the data that we see here.

Their detailed mapping will reveal to us which structures may have been used as places of living or reception, where water was stored, how was food prepared-- all these technical aspects of life at that time.

John Fritz:
You know when you have a city where maybe half a million people lived… for two centuries, they left a lot of things behind.

David Gimbel:
The picture that it paints is one of fairly intense economic activity, which we don't really have anywhere else in Vijayanagara…we have these massive structures which are formal structures- mostly, they have either a religious purpose or they have some kind of social purpose. And one of the portraits that's already emerging from doing this type of work out here is one of incredible urban density up here across the North Ridge.

George Michell:
What the surveying work that they are doing at the moment will establish is that certain zones which are not protected, which are not considered part of the ancient heritage will be proven to have remains going back to Vijayanagara times. They're working in a sort of field you know, it is not an archeological zone but their work will show in fact there is archeological data that needs to be studied and conserved; and that the protection of the site has to be extended to cover such zones which previously were just thought to be just fields. So a whole new idea of what constitutes the site is being revealed by this sort of surveying work.

Ian Stell:
PPT!

George Michell:
This type of technique that Archaeos is using, which is well known in other countries, as far as we know this is the first time such techniques have been used on an archeological site in India.

John Fritz:
It's very broadly applicable, and I hope that people will be able to learn the techniques and get the equipment, and find the support to do it. This is a wonderful application of high technology.

David Gimbel:
We are just performing a very small service which has been going on in India for a very long time. I mean, two generations of people lived and died doing that survey so essentially all that we're doing is extending a little cartography into Vijayanagara. And what I'm interested in is really stepping up the pace of archeology as much as possible so that we can try to recover whatever we can while it's still physically possible. And that's one of the things that we're doing at Vijayanagara.

End credits:
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thanks to

Dr. M.V. Krishnappa, Director and H.T. Talwar, Deputy Director
and the staff of the Karnataka Department of Archaeology and Museums

Dr. Pradeep R. Mehendiratta, Director-General, American Institute of Indian Studies
(New Delhi)

Anna Dallapiccola, Honorary Professor, Department of Fine Art, University of Edinburgh

George Michell, Vijayanagara Research Project

and thanks to

Carter and Charmaine Burden
Frank Copsidas
Barbara Gimbel
Robert and Despina Gimbel
Wendy Gimbel and Douglas Liebhafsky
Glenn Greenberg and Linda Vester
Nemeteschek, Inc.
Dan Radcliff
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