

# COLLABORATIVE ARCHAEOLOGY — THE SEVERAN MARBLE PLAN OF ROME



The BBC have picked up on Stanford's Digital Forma Urbis Romae Project.

[Link]

[Stanford Report – details]

The Forma Urbis Romae, also known as the Severan Marble Plan, was a giant marble map of ancient Rome that hung on a wall in a building, the Templum Pacis, near the forum. It measured 60 feet wide by 45 feet high and was made in the reign of Septimius Severus (around 200 AD). It was very detailed – planned down to the individual doorway and staircase. Amazing.





Stanford PhD student David Koller has been developing algorithms to find matches between the map fragments and to identify their locations in the ancient city. In February 2003, David found his first match – between fragment fn9 (described earlier) and fragment 351 – a small, unidentified fragment from the original set of 1,163. This match was so close that the fragments fit tightly together, as shown above. This “marble lock” was dramatically confirmed during a trip to Rome in June 2003, where we reopened the crates and examined these two fragments. Unfortunately, the map is in fragments – 1,186 of them, little more than 10% of the original; and not all the fragments still exist.

Stanford’s project aims to match fragments by using computers running pattern searching software on scans and digital models of the stones – a 3D jigsaw puzzle. An offshoot is a searchable on-line database [Link].

Marc Levoy is the main computer scientist. He and David Koller are in the news announcing new matches at a conference. Jen Trimble in the Classics Department at Stanford is the main archaeologist on the project.

One claim made several times by the news items is that the new matches will change the way we think of the ancient city of Rome. [This is what I want to take issue with.](#)

Yet again we have an archaeological news item that foregrounds new discovery as the core of archaeological research. It isn't. And there are far more interesting things going on in this fine collaborative effort.

The mathematics of the pattern matching is fascinating and has all sorts of possible applications. This, tied to 3D scanning and manipulation, is what particularly attracts the computer scientists. One aspect I find particularly intriguing is the aim to have the software extrapolate and interpolate – to jump across gaps. Marc sees a possibility of borrowing some algorithms from genetic sequencing. I find this impressive.

From an archaeological point of view, the value of the project lies predominantly in making accessible what was difficult of access – the fragments are well published, but in a limited and very expensive edition. The web site and associated database are a sound project in e-publishing. Anyone can look at the marble pieces on their computer and spin them – though the Italian authorities are worried enough (I would say paranoid), about intellectual property to forbid access to the actual digital models. (Like who is going to do anything with them? Even if someone found a way of making money out of them it is hardly going to be a mystery where the scans came from!)

As for the matches that have caught media attention – these are of limited archaeological value. Let's be honest. The main matches were made long ago. Most of the plan is missing. And just what will a few extended streets add? It is not as if the project is going to redraw the map of ancient Rome.

“Scholars used to write whole articles and gain massive academic points for adding one new [match],” said Elizabeth Fentress, an Oxford-educated archeologist.

[Stanford Review]

What a sad comment on a dessicated, dead archaeology.

As Jen Trimble says, the task still is and always was to interpret the wonderful evidence we have in the plan for urban design and city life. Archaeologists are

just now beginning to get round to this effort of explanation and understanding. It is a task that requires some disciplinary cross-fertilization quite beyond this coming together of computer aided visualization and e-publication. An archaeological engagement with new thinking in human and cultural geography is overdue in Classical Archaeology.

This is an expensive project and there is a temptation to justify the expense by saying it will change the way we think of history, by focusing on the appreciative gasps of the audience as a new match between marble plan fragments was revealed, as Marc Levoy put it when talking about his recent conference presentation in Rome. But I am convinced we must not go down this line of emphasizing new finds, focusing attention of the sites and artifacts that archaeologists dig up and deal in. This **object centered fetishism** is precisely what fuels the collectors market in antiquities as objects of value-in-themselves. It destroys history. This is, ironically, not what archaeology is about. What really matters? The stories the places and things tell. Emplotment. And this requires so much more than the things themselves.

The Forma Urbis Romae project shows that the most valuable possibilities generated by collaboration do not necessarily relate to *new knowledge* but to other **emergent network effects** – algorithms that apply to genetic sequencing, a new reason for a renewed interest in ancient urban design, the topic of e-publication in archaeology (what form, for whom, at what cost?). Also collaboration may be quite centrifugal – divergent interests running in quite contradictory directions. The pattern matching algorithms beloved of the computer scientists have no direct relation to the archaeological interpretation of street life in ancient Rome. And the main archaeological achievement of the project may be a review of the marble plan of Rome in the light of new thinking about urban life that has nothing to do with 3D scanning.