PRE-HISTORIC MAPS

Many are hard to recognize as maps

-Rock art, pottery, carving, and etchings

-Movement, gestures, & oral traditions

-Paper and Textile maps appeared later

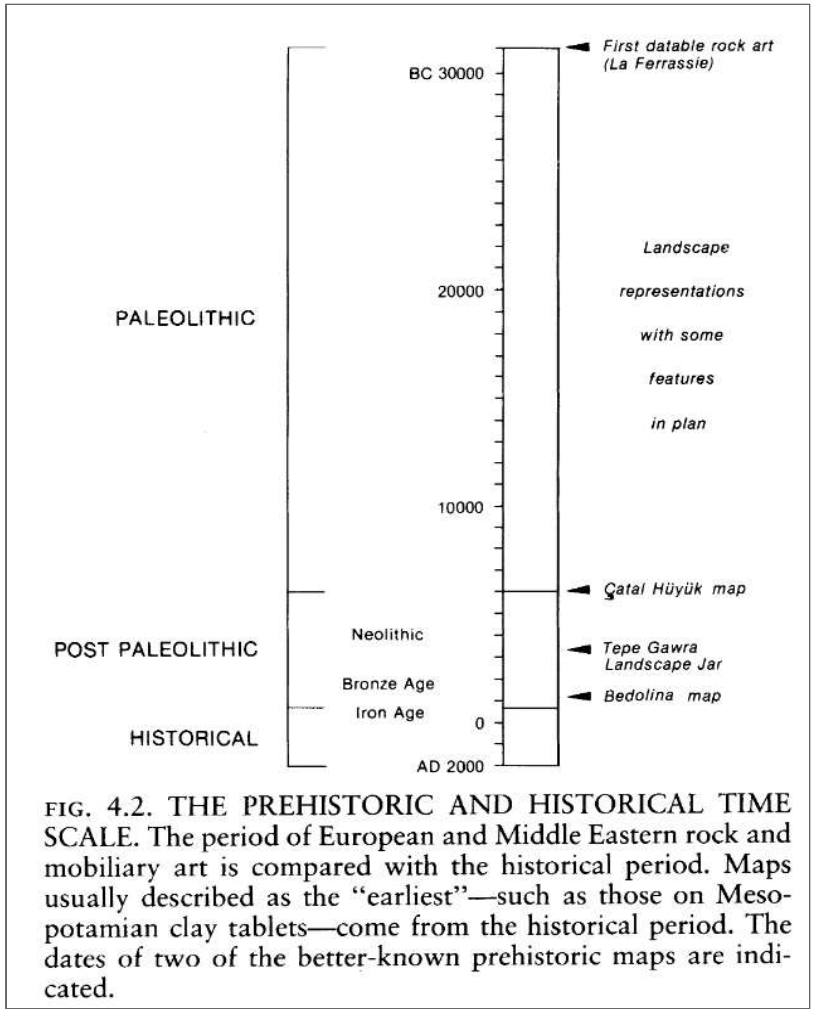
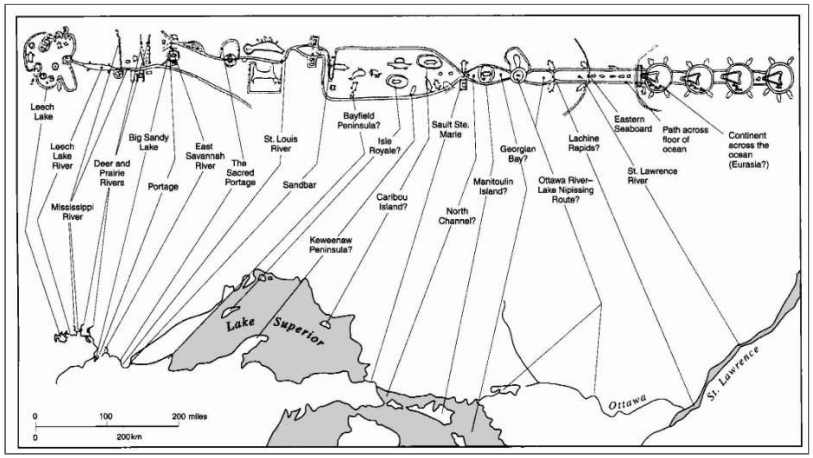


FIG. 4.2. THE PREHISTORIC AND HISTORICAL TIME SCALE. The period of European and Middle Eastern rock and mobiliary art is compared with the historical period. Maps usually described as the "earliest"—such as those on Mesopotamian clay tablets—come from the historical period. The dates of two of the better-known prehistoric maps are indicated.

FEW SURVIVING EXAMPLES

Must rely on more modern analogues.



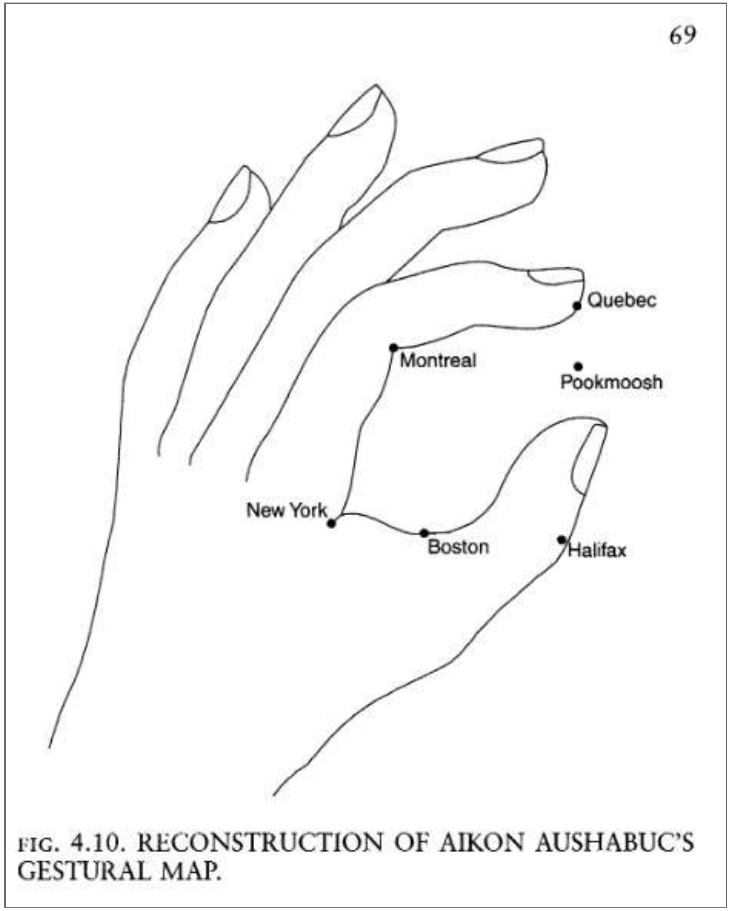


FIG. 4.10. RECONSTRUCTION OF AIKON AUSHABUC'S GESTURAL MAP.

PRE-HISTORIC MAPS

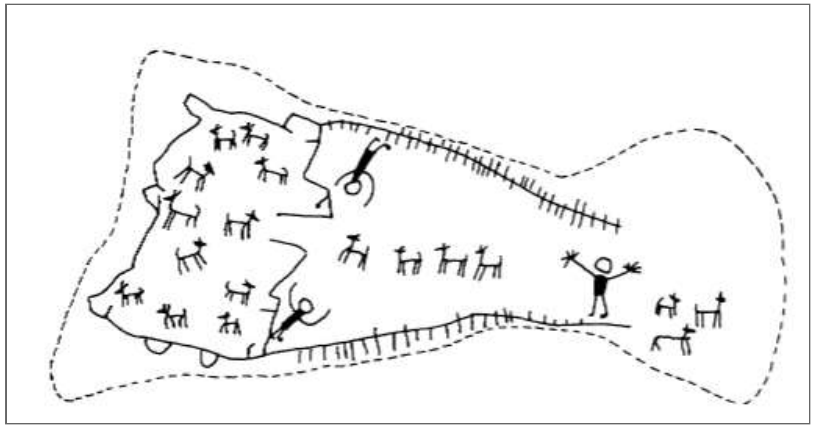
Frequently depicted:

-Landscapes

-Hunting Grounds

-Villages

-Agricultural Plots



OLDEST KNOWN MAPS

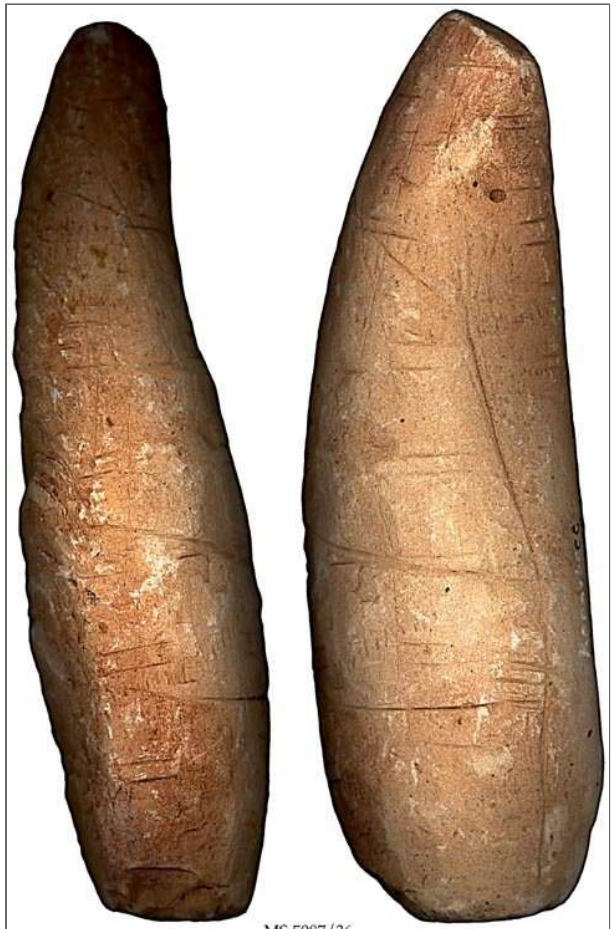
MAMMOTH TUSK

Oldest known graphic depiction of space. Hunting landscape around the Dyje River Czechia 26,000 B.P.

OLDEST KNOWN MAPS

YURDA

Stone engraving of Darling River basin with overland shortcuts. Australia 20,000 B.P.



MS 5087/36
Cylcon (Yurda), possibly with map of Darling river with the tributaries Warrego River and Culgoa River. New South Wales, Australia, ca. 20000-3000 BC

OLDEST KNOWN MAPS

MAP ROCK

Stone engraving of Snake River Valley Idaho 12,000 B.P.

FIRST "URBAN" PLANS

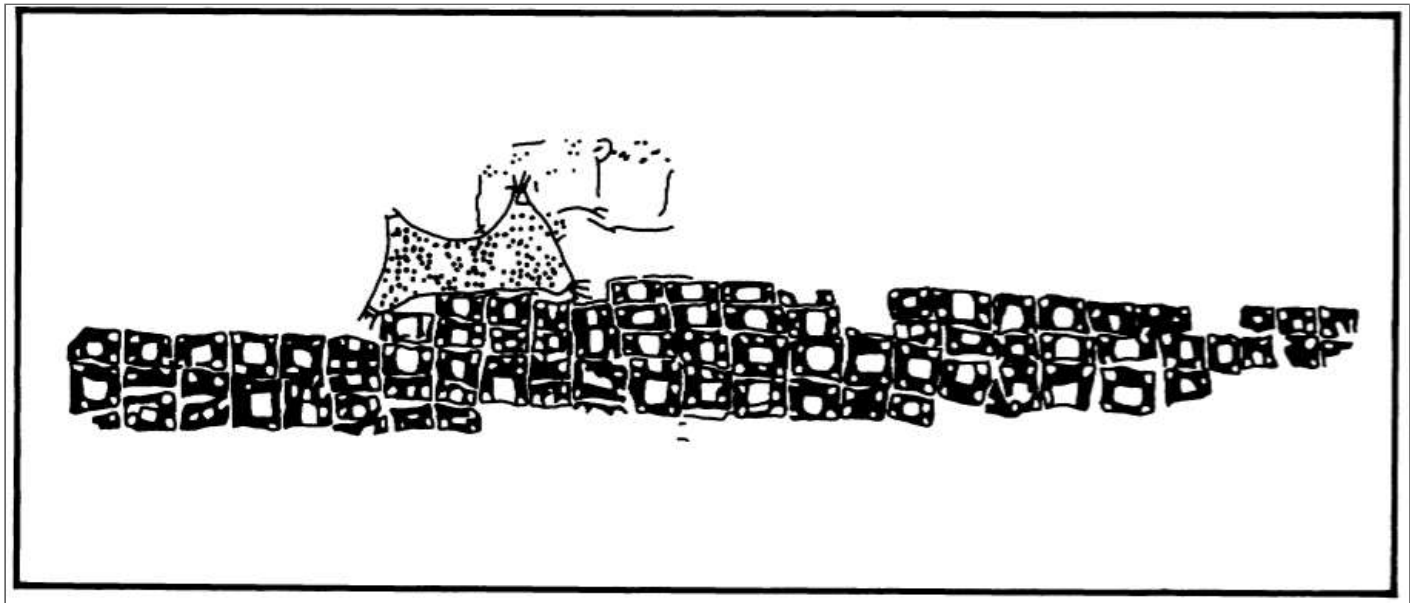
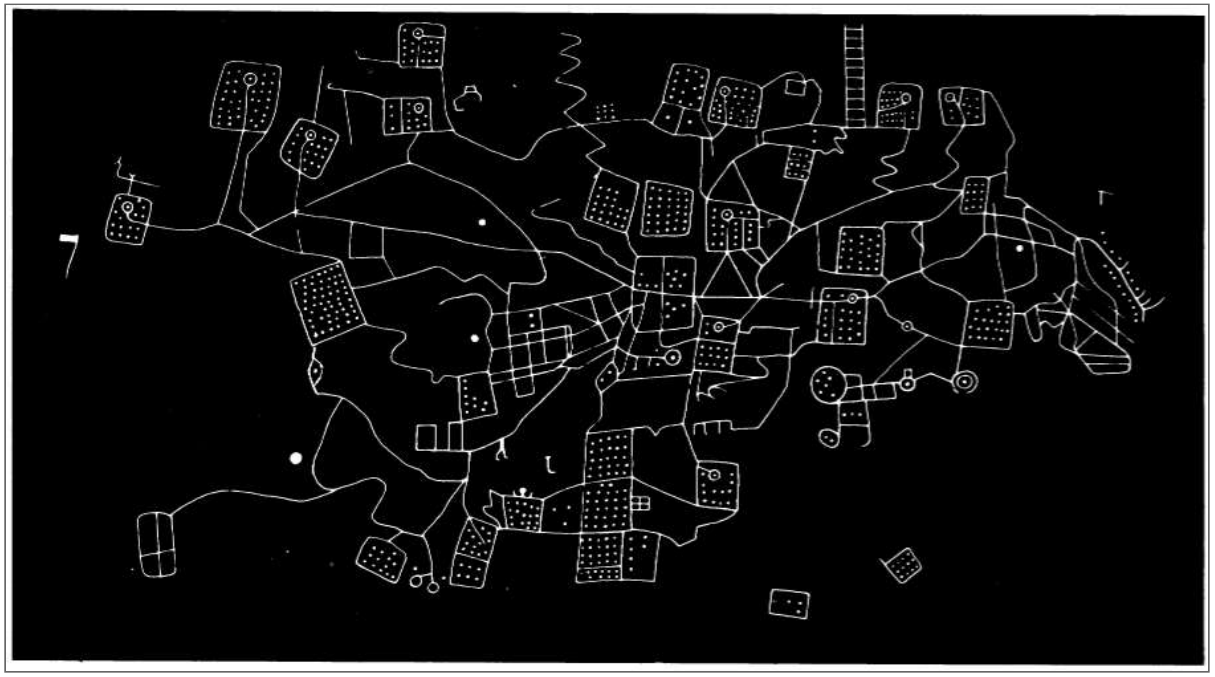


Fig. 4. *REPRODUCTION OF THE WALL PAINTING AT ÇATAL HÜYÜK* showing the town and the (? erupting) volcano. (After the copy by Grace Huxtable in Mellaart 1964, Plate VI).

Çatalhöyük a village Turkey, 8700 B.P.

FIRST "URBAN" PLANS

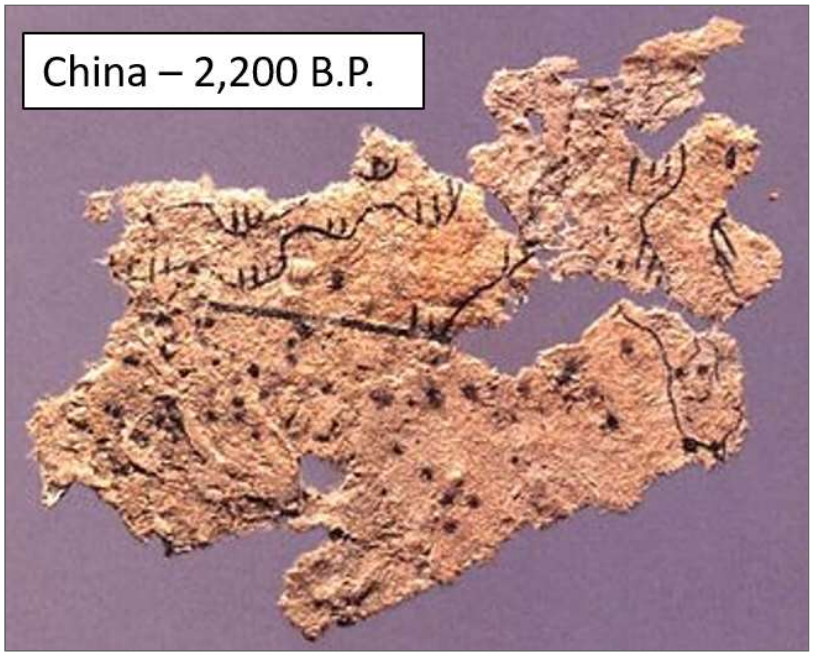


Bedolina Petroglyph, Italy, 4000 B.P.

PAPER AND TEXTILE MAPS

Maps on papyrus paper appeared in Egypt ~3,200 BP.

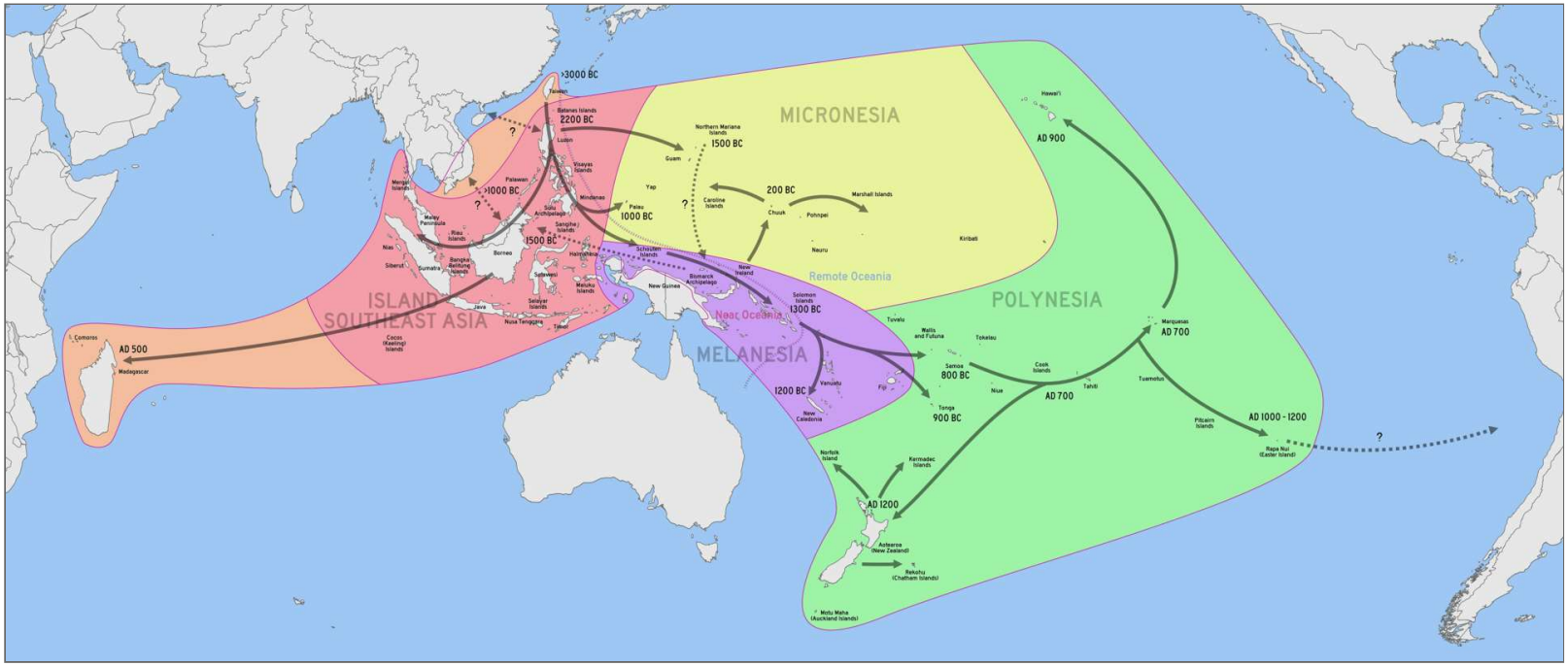
PAPER AND TEXTILE MAPS



Paper and silk maps appeared in China ~2,200 BP.

CARTOGRAPHY AND NAVIGATION

Austronesian expansion from Taiwan started ~5,000 BP

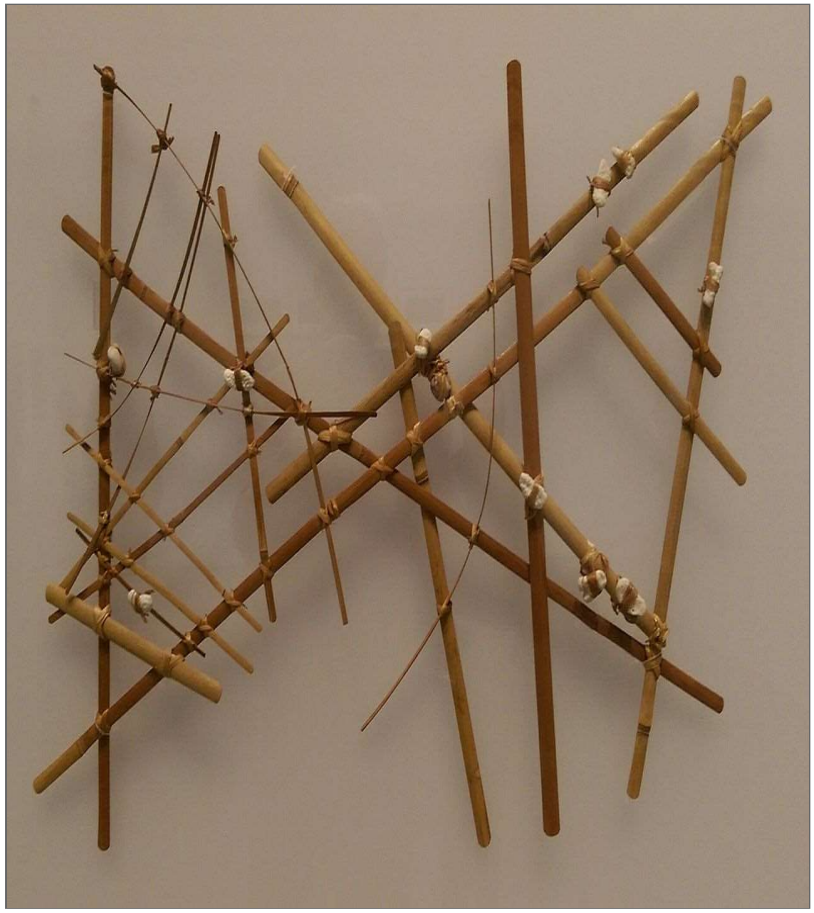


NAVIGATIONAL CHARTS

Polynesian navigators spread across the pacific

-Reading stars, waves, weather, and wildlife

-Used charts, songs, and stories to record important details



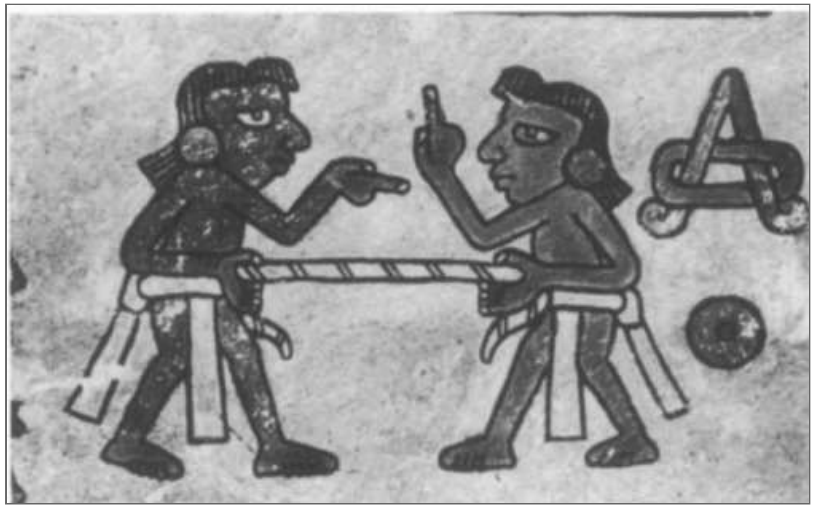
ADVENT OF SURVEYING

The earliest survey methods were:

-Limited in scale

-Labor intensive

-Only applicable for small areas



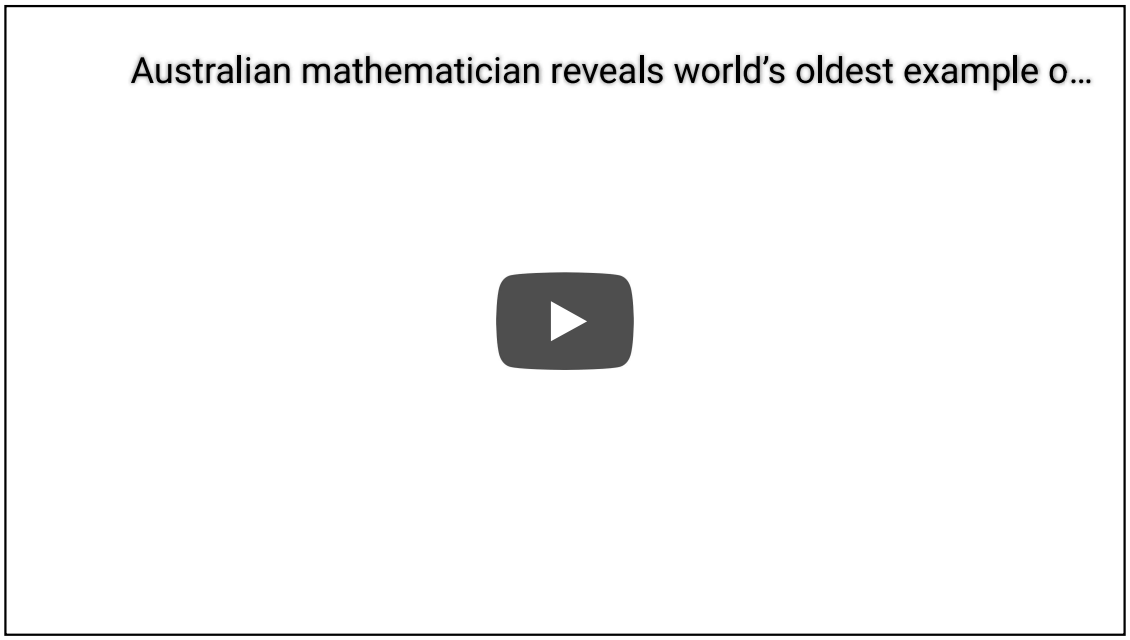
Rope stretching developed in Egypt and Mesoamerica.

SYSTEMATIC DATA COLLECTION

As agricultural societies coalesced and grew methods for the systematic collection of information were developed and the first surveys were conducted. Methods were needed to conduct agricultural surveys, construct buildings, and create plan settlements. Objects needed to be drawn to scale for accurate representations.

ADVENT OF SURVEYING

Systematic measuring and recording of angles and distances leads to development of geometry and trigonometry. Maps became more accurate buy they were limited to small areas.



URBAN PLANNING

Town plan of Nippur, Babylonia on a clay tablet. Possibly the earliest map drawn to scale 3500 B.P.

Maps could now "accurately" represent: bearings, distances, elevations, & sizes

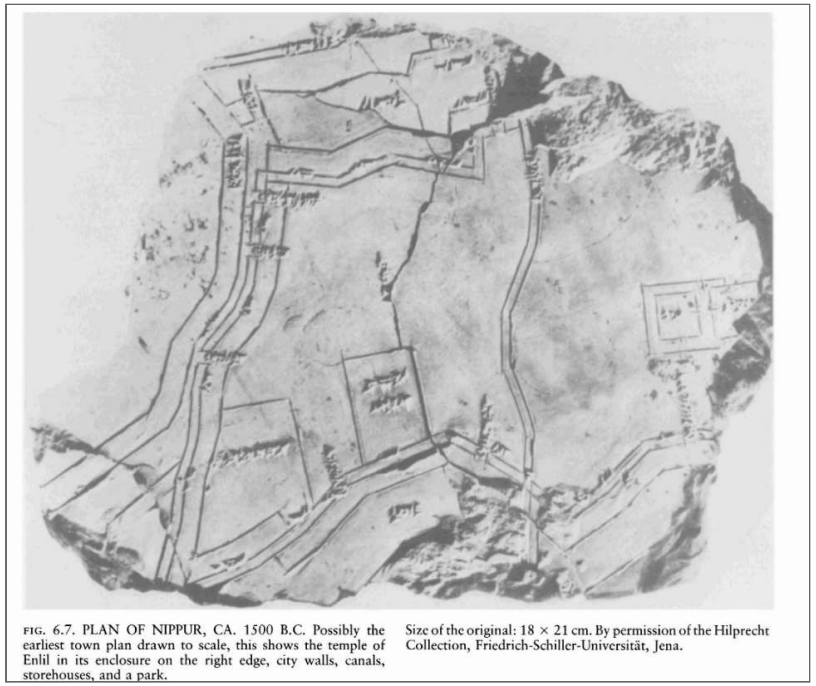
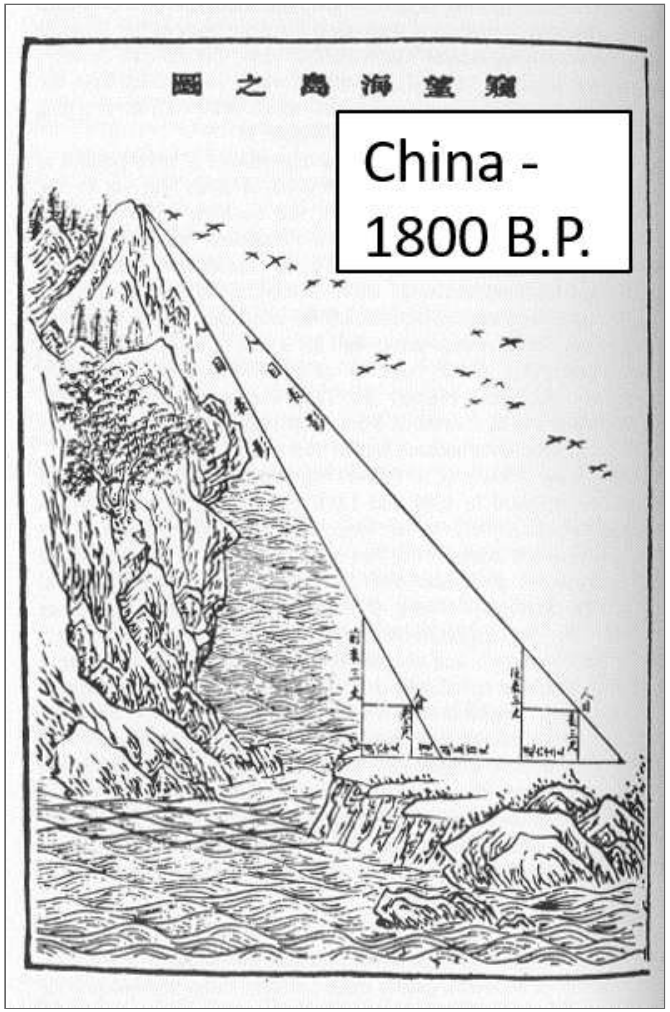
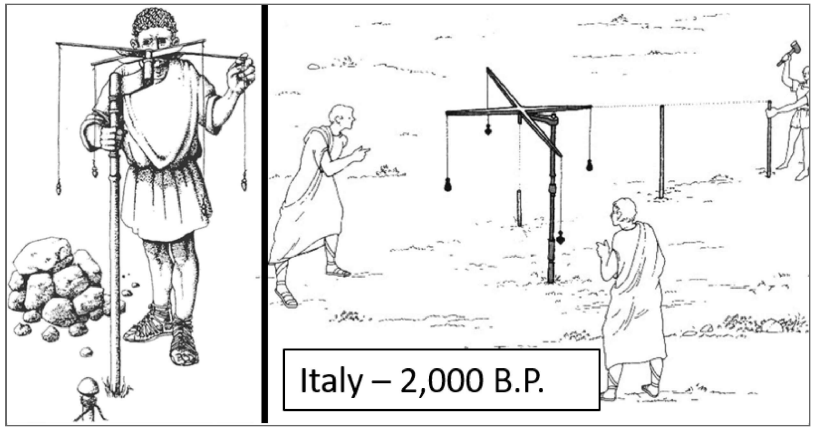
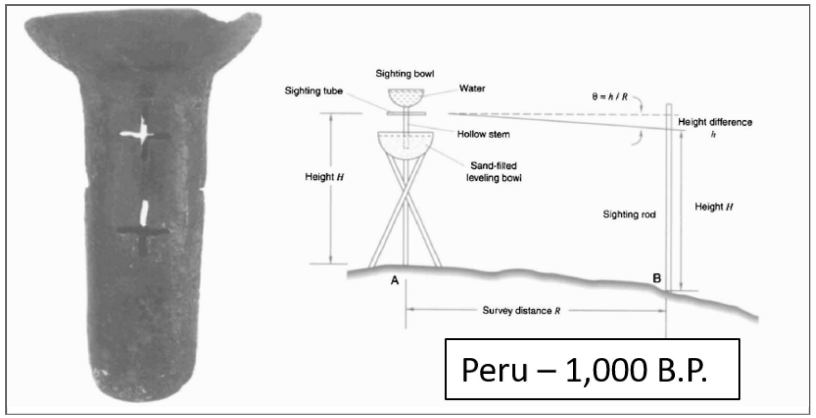


FIG. 6.7. PLAN OF NIPPUR, CA. 1500 B.C. Possibly the earliest town plan drawn to scale, this shows the temple of Enlil in its enclosure on the right edge, city walls, canals, storehouses, and a park. Size of the original: 18 × 21 cm. By permission of the Hilprecht Collection, Friedrich-Schiller-Universität, Jena.

LINE OF SIGHT METHODS







LINE OF SIGHT METHODS

Allowed for surveying over greater distances and mapping larger areas. Road networks could be constructed, distances between settlements could be approximated.

FIG. 6.10. THE BABYLONIAN WORLD MAP, CA. 600 B.C. This map shows the relationship between the legendary regions beyond the ocean and the Babylonian world. The parallel lines running to and from Babylon (the elongated rectangle) represent the Euphrates, while the circular band represents the salt sea.
Largest dimensions of the original: 12.5 × 8 cm. By permission of the Trustees of the British Museum, London (BM 92687).

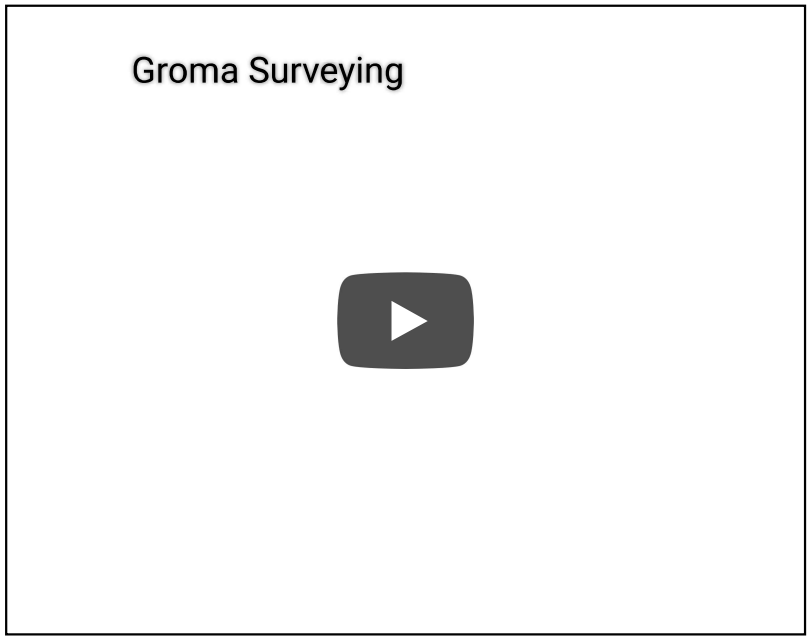
FIG. 6.11. CLAY TABLET MAP EXCAVATED AT YORGAN TEPE. This is a cast of the earliest known example, ca. 2300 B.C., of a topographical map in which the cardinal directions are clearly marked.
Size of the original: 6.8 × 7.6 cm. By permission of the Semitic Museum, Harvard University, Cambridge (acc. no. SMN 4172); see also Theophile James Meek, *Old Akkadian, Sumerian, and Cappadocian Texts from Nuzi*, vol. 3 of Harvard University, Semitic Museum, *Excavations at Nuzi*, 8 vols. (Cambridge: Harvard University Press, 1929–62), tablet 1.

CELESTIAL GEOGRAPHY

From early times the Babylonians observed how the heavenly bodies moved or did not move, and in the second and first millennia B.C. they noted this in writing. Their basic aims were calendrical and astrological, yet

THE GORMA

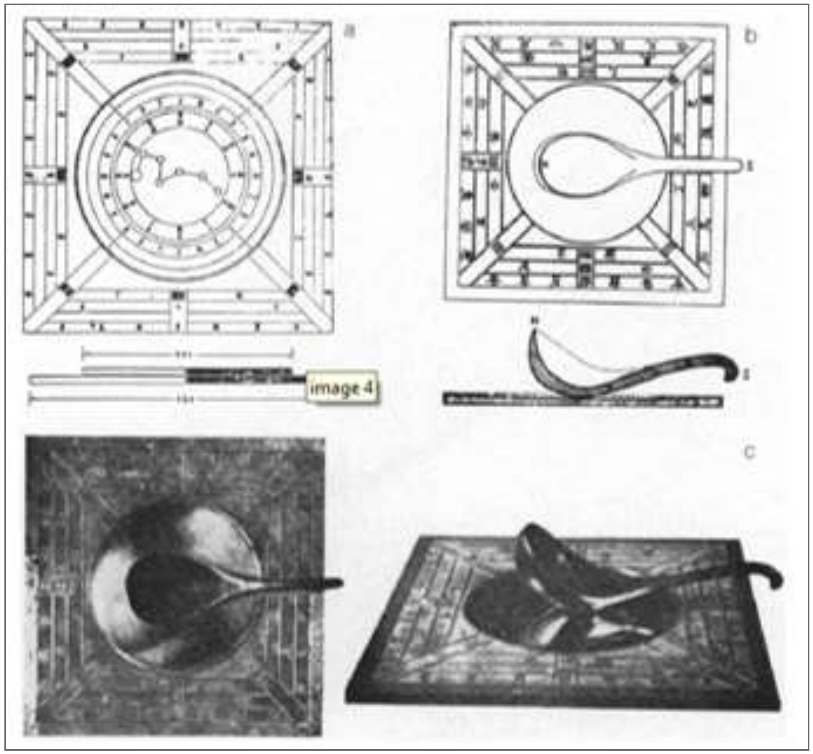
The Roman empire employed professional surveyors. They built a massive road network, created an Agricultural land registry and did "Urban" planning. The gorma is the precursor of the **Theodolite**



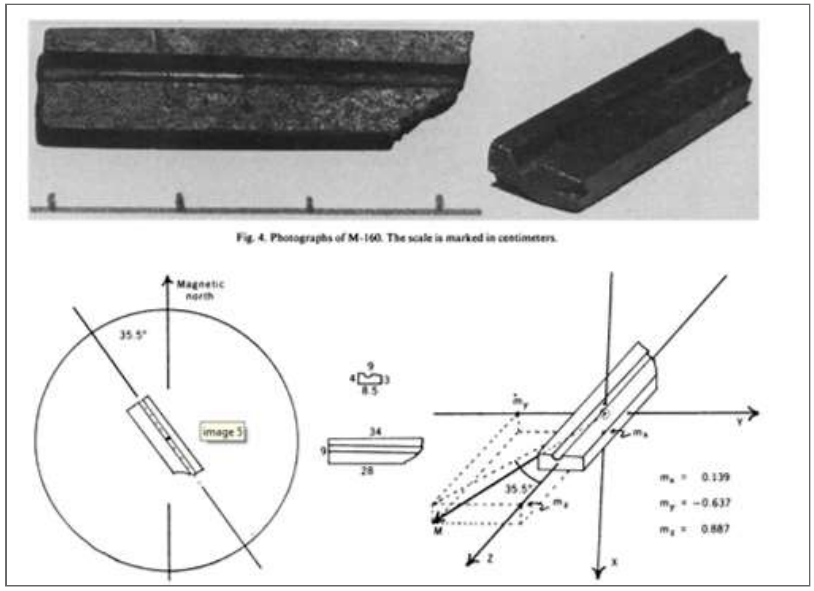
THE GORMA

Roman roads at the height of the Empire

THE COMPASS



Han Dynasty "south-governor"
~2200 BP.



Olmec Lodestone ~3000 BP.

THE COMPASS

Lodestones are naturally occurring magnetic minerals. They were first used by the Olmec civilization to orient their pyramids and cities.

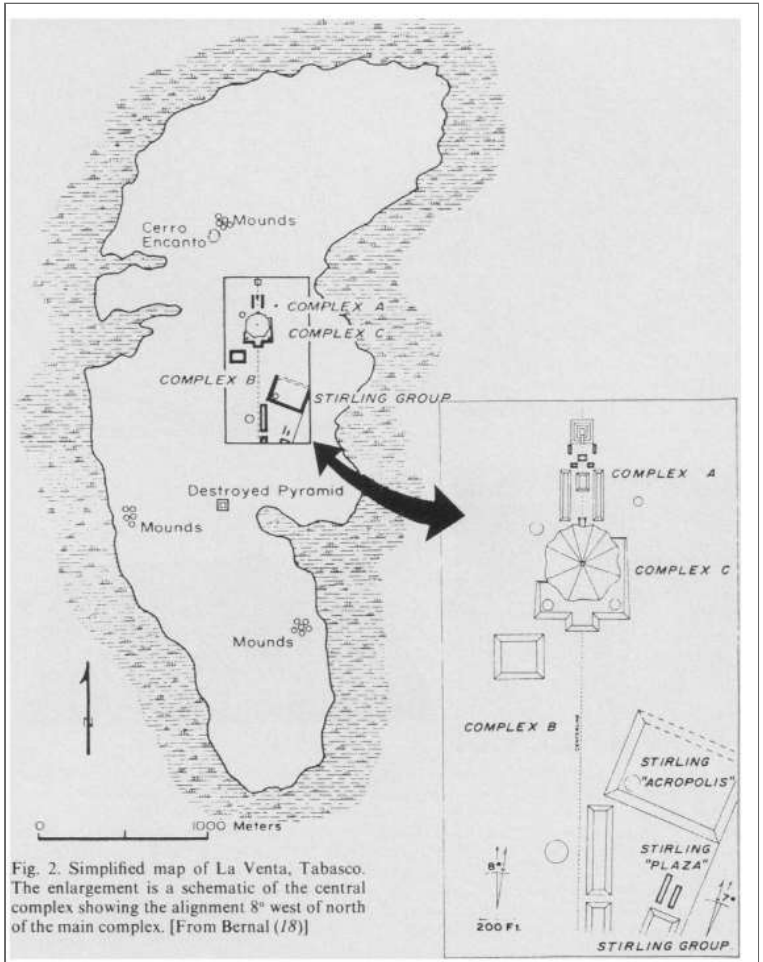


Fig. 2. Simplified map of La Venta, Tabasco. The enlargement is a schematic of the central complex showing the alignment 8° west of north of the main complex. [From Bernal (*18*)]

755

THE COMPASS

The compass was first used for navigation in China during the Song Dynasty ~ 1000 B.P. It made its way to Europe around 800 B.P. The invention of the compass spurred on the "Age of Exploration"