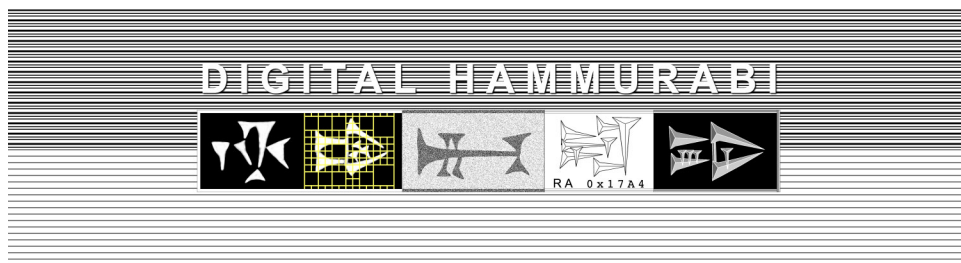


The Digital Hammurabi Project, originating at Johns Hopkins University, is a large-scale, cross-discipline effort aimed at developing new technologies for research on cuneiform tablets – the world's oldest written documents.



We are inventing new solutions for scanning and displaying very high resolution 3D models of cuneiform tablets; we are fostering international collaboration on a Unicode Sumero-Akkadian computer encoding; and we are establishing the infrastructure for a petabyte-scale digital library to archive thousands of virtual tablets and transmit them over high-speed Internet connections.

Initial funding of \$ 1.6 million by the U.S. National Science Foundation over the next three years provides us with a good start toward reaching our goals.

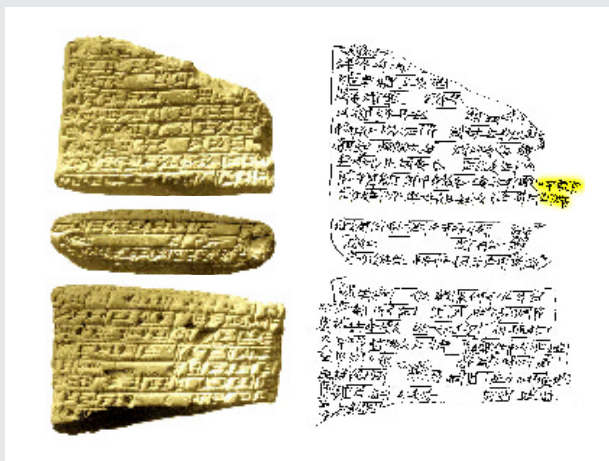
Cuneiform, the world's oldest writing system, is, by its very nature, a 3 dimensional writing system:

- the characters themselves are 3 dimensional - wedge impressions in clay
- the media are 3 dimensional - rounded clay tablets
- the writing streams are 3 dimensional - sentences often run over the edges and onto the backs of tablets

Conventional 2D photography is inherently inadequate for rendering cuneiform tablets, one reason why cuneiformists depend largely upon hand drawn copies. These autographs record a scholar's interpretation of the signs, but both the quality of interpretation and the quality of drawing vary widely and disputed readings are common.

In order to verify readings cuneiformists apply for travel grants to physically inspect tablets in the collections in Philadelphia, London, Aleppo, etc. This is a slow, delicate, expensive, tedious, and unproductive process. It has been estimated that only about 1/10 of the extant cuneiform tablets have been studied.

The Digital Hammurabi Project will revolutionize cuneiform studies by making available to every researcher's desktop high-resolution, 3 dimensional computer models of the tablets.



The signs highlighted in yellow on the hand copy run off the right edge of the tablet and are not visible in the 2D photographs.

"Sargon, the Lion", Old Babylonian text
Joan Goodnick Westenholz, 1997, *Legends of the Kings of Akkade*
#7 in *Mesopotamian Civilizations*, Jerrold Cooper, Series Editor

SPECIFIC GOALS OF THE PROJECT:

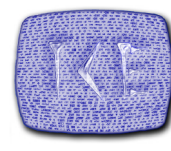
- produce a portable, very high resolution (100 lines per millimeter), 3D surface scanner that will scan all facets of a typical cuneiform tablet in under a minute
- develop new computer algorithms for real-time, multi-resolution rendering of virtual 3 dimensional cuneiform tablets that can be rotated, panned, tilted, zoomed, and re-lighted by end users using cross-platform software of our own design
- coordinate a formal proposal to the Unicode Consortium for a standard Sumero-Akkadian cuneiform encoding (continuing the work started by ICE, the Initiative for Cuneiform Encoding)
- collaborate on developing new international standards for 3D data and cuneiform text markup (XML) aimed at data longevity and integrity
- establish a petabyte-scale digital library archive of virtual cuneiform tablets aimed at rapid, real-time, Internet2 dissemination
- invent a completely new technology - automated 3D character recognition of cuneiform writing



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INITIATIVE FOR
CUNEIFORM ENCODING