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'Digital 3D model reconstruction of Stonehenge phase 3c.'

EXHIBITION POSTER: *'A picture is worth a thousand words: exhibited images of archaeological practice, past and present'*

Exhibited at the Theoretical Archaeology Group (TAG) 2010 conference at the University of Bristol, UK.

Dr. Rupert Till, Andrew Taylor, & Dr. Ertu Unver

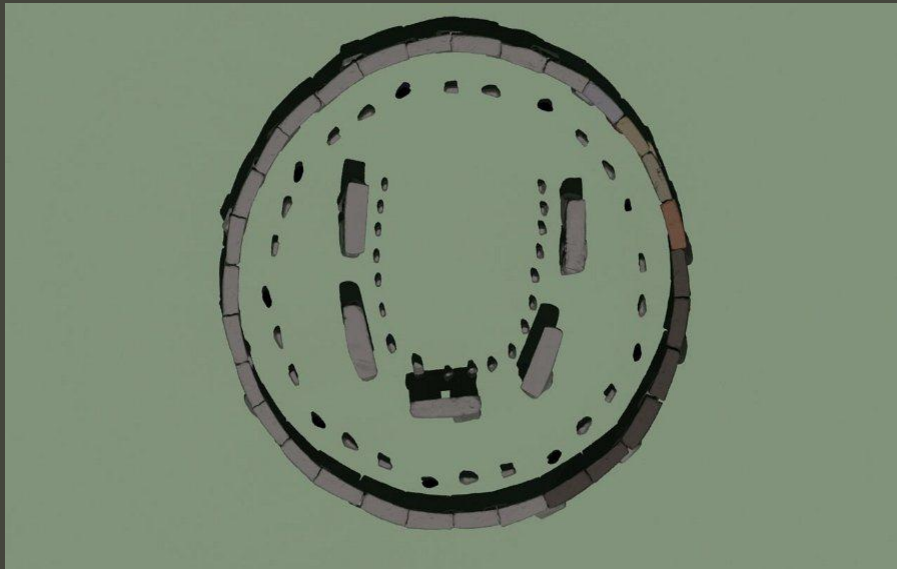
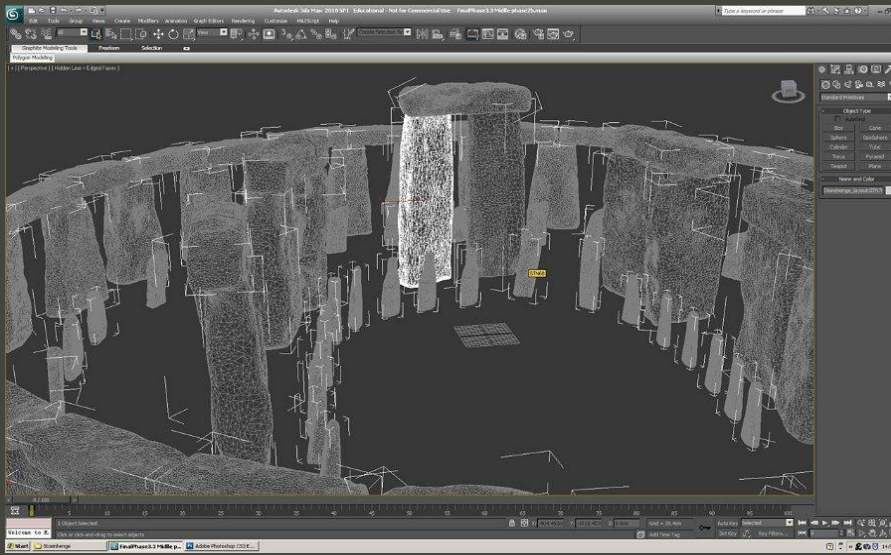
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Figure 1: 3D CG Stonehenge model phase 3c.
By Dr. Ertu Unver, Andrew Taylor, & Dr. Rupert Till (2010) ©

Figure 1 is a rendering of a reconstruction of Stonehenge phase 3c using 3D modeling and animation software. It was created to illustrate how Stonehenge phase 3c may have looked in about 3300 B.C. The 3D model was initially developed in order to create an acoustic model of Stonehenge using Odeon architectural software, in which the acoustic properties of the stones and space could be simulated, so is a kind of by-product of other research. Archive plans and maps of Stonehenge were sourced from English Heritage National Monuments record. Historical maps were combined with Satellite maps to get correct positional data of the site. Around 500 scanned surfaces were merged together to create over 90 digital 3D stones.

Using 3D scan software the models were cleaned and polygon surfaces optimised. Photographs of the stones were recorded on the site which were then applied as textures on the stones. Missing or fallen stones were replaced using copies of those still present. Lighting, weather and astronomical data were simulated and added using 3D Studio Max.



Development work-in progress 3D CG model of Stonehenge

In some countries major archaeological sites are rebuilt, filling in the gaps with modern materials, obviously a problematic practice. In the UK this does not happen, which means it is sometimes hard to appreciate what a site might have looked like in the past. This work hopes to capture some of the experience of Stonehenge of prehistory. This is actually a reproduction of what the site might have looked like if still intact, on December 21st 2010, near sunset.

This research project aims to continue developing by placing the stones on an accurate surface layer made using LIDAR data, to create the surrounding topography. It is planned to add grass and trees, (landsnail research for historical accuracy); more photographic textures; and further modelling of missing stones, such as station stones, and partners for the heel and slaughter stones. Reconstructions of each of the different phases of Stonehenge will be modelled, and eventually Durrington Walls, Bluestonehenge, Woodhenge and related monuments.



Poster Exhibition at TAG 2010 Conference in University of Bristol, UK



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For further information work please see:

Presentation: <http://eprints.hud.ac.uk/9351/> 3D Acoustic Stonehenge Animation

Video: <http://www.youtube.com/watch?v=VvE8WUw6-VM>

Exhibited in TAG 2010 Conference in University of Bristol, UK.