University of Huddersfield Repository

Taylor, Andrew, Unver, Ertu and Till, Rupert

Ritual Fire at Virtual Stonehenge

Original Citation


This version is available at http://eprints.hud.ac.uk/10003/

The University Repository is a digital collection of the research output of the University, available on Open Access. Copyright and Moral Rights for the items on this site are retained by the individual author and/or other copyright owners. Users may access full items free of charge; copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational or not-for-profit purposes without prior permission or charge, provided:

- The authors, title and full bibliographic details is credited in any copy;
- A hyperlink and/or URL is included for the original metadata page; and
- The content is not changed in any way.

For more information, including our policy and submission procedure, please contact the Repository Team at: E.mailbox@hud.ac.uk.

http://eprints.hud.ac.uk/
This poster paper presents the creation and testing of ritual fires at a virtual Stonehenge site. This interdisciplinary research project drew together expertise from subject areas including 3D modelling, animation, digital video, music technology and ethnography to begin to reconstruct and visualise the stone circle and Stonehenge site using traditional archive data methods contemporary digital tools and technologies. The researchers are providing collaborative evidence of their methods to demonstrate how virtual models can be used to see, think, interpret and analyse monuments, ritual sites and their uses. The animation accompanying the poster can be viewed on youtube.com which demonstrates how a phenomenological and experiential exploration of a site might provide archaeologists, historians and heritage visitors with non-destructive interactive experiences and new understanding.

The main focus of this poster paper is to show ongoing research on adding physical environmental effects in particular fire to begin to re-construct an representations of ritual practice at Stonehenge. The researchers ask what can be learned by researchers being involved in virtual reconstructions, what insights can be gained by exploring a reconstructed site virtually. The research investigates the advantages and difficulties of an interdisciplinary approach for the project being carried out within a creative arts context rather than within archaeology. The importance of the collaborative relationship between professionals from Art, 3D Design, and Music technology became increasingly apparent as the project evolves accumulating the data which has begun to situate the discussion within a theoretical framework.

The research project team has explored multimedia experimental archaeology in a 21st century context. The team includes Dr. Ertu Unver, Andrew Taylor from the 3D digital research group and Dr. Rupert Till a music technologist from School of Music, Humanities & Media to create a accurate 3D model of the Stonehenge stone circle for anthropological and virtual archaeological studies. Previous research in this area by Taylor focused on investigating prehistoric ritual performances and experiences through acoustic modeling and published their 3D environments which included work with 3D scan data, modelling and rendering. Through the collaboration 3D model of Stonehenge has become more archaeologically accurate through use of digital data and tools such as LIDAR (Light Image Detection and Ranging) data, virtual physics systems adding sun, wind, fire and the introduction of virtual human characters. These developments in the project are enabling a phenomenological immersive virtual archaeological experience that can encourage viewers to explore with their emotions and bodies, with their aesthetic senses as well as their brains.

In this phase of the project the research team have constructed an extension of previous depictions of art, that explores sacred ritual practices through history of the site. This work asks whether virtual experiences and models are as able to transport the viewer around a space as paintings and drawings, and are they more readily believable as a physical interpretation. A painting can be seen as an artist's impression, a rendered 3D computer graphics model may well be seen as more ‘scientific’, although the team believes modelling and animation is expressed by artists re-imaging experiential spaces. This work theorises that the origins of ceremony and ritual are inseparably linked to art. There is a great deal of interest in 3D virtual reconstruction of archaeological sites for education and promotion to allow the public to interact with and experience heritage sites without the restrictions, physical erosive effects and costs. The Fire effect used in the animation experiments at the Stonehenge. These are visual effects evaluations and environmental physics tests of how virtual fire and smoke behaves in and around the stones and across the site and this is now being further explored through further investigation of historic and archaeological data research into ritual behaviour, ceremonies and sacrifices.

Acknowledgements: The research team appreciates the support from University of Huddersfield, English Heritage and Geomatics Group.