RITUAL FIRE AT VIRTUAL STONEHENGE

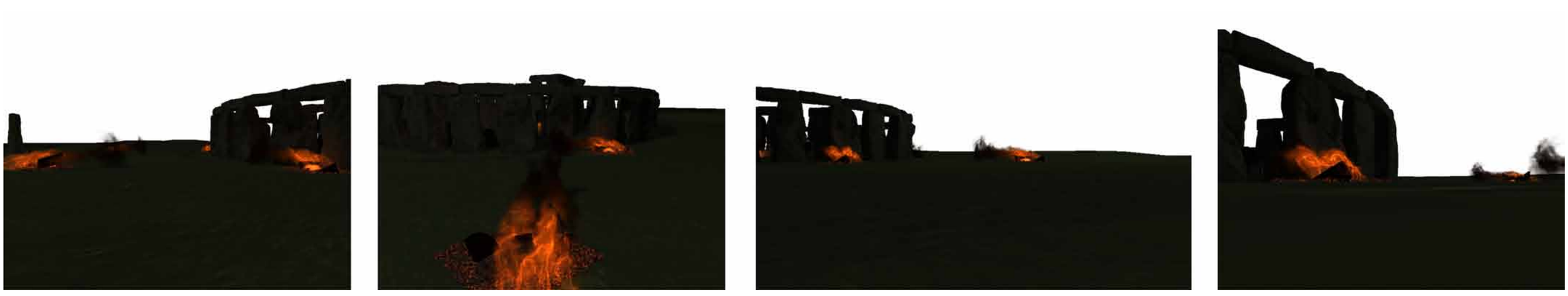
Andrew Taylor & Dr. Ertu Unver
School of Art Design & Architecture
Dr. Rupert Till School of Music, Humanities & Media

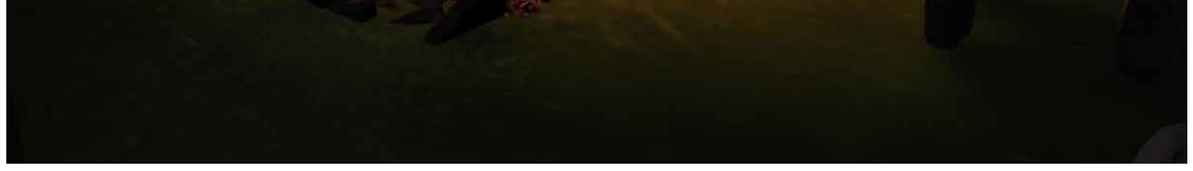
This poster paper presents the creation and testing of ritual fires at a virtual Stonehenge site. This interdisciplinary research project drew together expertise from subject areas including 3D modelling, animation, digital video, music technology and ethnography to begin to reconstruct and visualise 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 this 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 virtual visitor access.

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 relationships 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 Till focused on investigating prehistoric ritual performances and experiences through acoustic modeling and Taylor & Unver 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, rain, fire and the introduction of virtual human characters. These developments in the project are enabling a phenomenological, immersive, archaeological, educational 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 throughout 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' approach although the team believes 3D modelling and animation is expressed by artists re-imagining 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 in the animations exhibited are not historically accurate ritual uses of fire 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.