

# Space technologies help historians to virtually reassemble tomb monuments

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Dr. Phillip Lindley examining the Renaissance sculpted tomb-monument of Thomas Howard, Duke of Norfolk. Credit: University of Leicester

A group of Renaissance Tomb-Monuments in Suffolk is being analysed with tools developed in Space Science, to unlock their mysterious past and offer new insights into the Tudor Reformation.

Led by the University of Leicester, this innovative Heritage Science project draws together space scientists, art-historians, archaeologists and museologists from Leicester, with historians at Oxford and Yale, and [archaeologists](#) and scientists from English Heritage.

An interdisciplinary research programme in Cultural Heritage, it is funded by a major award from the Science and Heritage Programme of

the Arts and Humanities Research Council (AHRC) and the Engineering and Physical Sciences Research Council (EPSRC). The award is for £497,000 and an additional three fully-funded PhD studentships.

Principal Investigator Dr Phillip Lindley, from the University of Leicester Department of History of Art and Film, said: "Key to this programme is the innovative employment of techniques borrowed from Space Science, principally three-dimensional scanning and non-destructive materials analysis, to solve a complex set of historical, archaeological and art-historical problems."

The researchers will first analyse the great Renaissance monuments of Thomas Howard, third Duke of Norfolk (d. 1554) and of Henry Fitzroy (d. 1539), Duke of Richmond, Henry VIII's illegitimate son.

Dr Lindley said: "Both monuments seem to have been dramatically altered when they were moved in the middle of the sixteenth century from their original locations in Thetford Priory to Framlingham Parish Church, where they now stand.

"Puzzlingly, pieces excavated at Thetford in the 1930s seem to have originally belonged to these monuments and this suggests that they used to look very different from what we now see.

"We shall virtually disassemble the monuments and reconstruct their original forms for the first time in half a millennium, trying to integrate the excavated fragments in our virtual reconstructions. It is as if we have two (or more) three-dimensional jigsaws: we need first to sort the pieces out and then put them back together."

With scanning and analytical techniques borrowed from Space Science, all this can be done virtually, without even touching the [monuments](#). Materials analysis (using XRF, RAMIN, and other non-destructive

techniques) again developed for [Space Science](#) applications, will provide information about the original painted surfaces.

The project will function as a case study, adapting techniques for analysis, interpretation and display, to make them widely transferable, and to further the innovative deployment of science in the [Cultural Heritage](#) Sector.

Provided by University of Leicester

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