Meet the Earthworks Builders Video Game

Michelle Aubrecht, Ohio State University, Art Education, 1961 Tuttle Park Pl., 1st Floor, Columbus, OH 43210, Aubrecht@columbus.rr.com
Tyler Ayres, Ohio University, School of Media Arts and Studies, 9 South College St., Athens, OH 45701, ayres@ohio.edu
Peter Gerstmann, peter.gerstmann@gmail.com
Dan Norton, Filament Games, 2010 Eastwood Dr., Suite 104, Madison, WI, norton@filamentgames.com

Concept

Funded by the National Endowment for the Humanities (NEH), *Meet the Earthworks Builders* is about understanding the Newark Earthworks as a lunar observatory.

Game Play

The player may navigate among a series of panoramic vistas in a style similar to Myst, by clicking on hotspots. The actual Newark Earthworks is several miles wide and we are using an accurate 3D model provided by CERHAS and John Hancock who is a content advisor on this project (Figure 1).

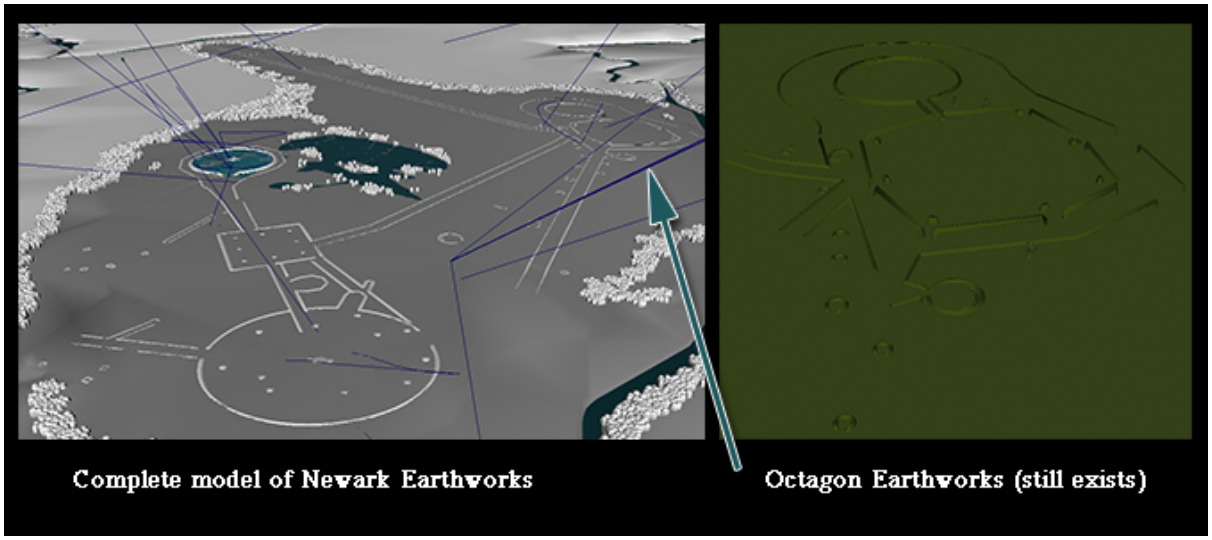

Figure 1

In this game environment, the focus is on the sky and the cycle of the moon. The user interface gives the player information about the moon for day, month, and year. The Newark Earthworks is structured to observe the Northern most lunar standstill that occurs every 18.6 years. Observing this is the win state and the player must stand on the observatory mound, facing the right direction on the right year of the cycle. Hence, players must manipulate time, position, and orientation in order to advance. To reach this goal, the player will unlock a series of moon positions by collecting markers that correspond to the monthly and yearly cyclical movements of the moon traversing minor to major standstills.

Cycles lend themselves to discovering patterns and that makes for great game mechanics. The primary objective of the game is for the player to predict where the moon will rise and thus, building upon a natural pattern of movement, players will “catch the moon,” which results in players receiving environmental enhancements such as brighter stars, the Milky Way, animated constellations, and added sounds such as bird calls, wind, and water. Players will identify moments where time, position, and orientation intersect to reveal lunar events.

To help the player understand the moon’s trajectory, a procedurally animated trail shows where the moon has been and remains for several rotations, but narrows and fades (Figure 2).

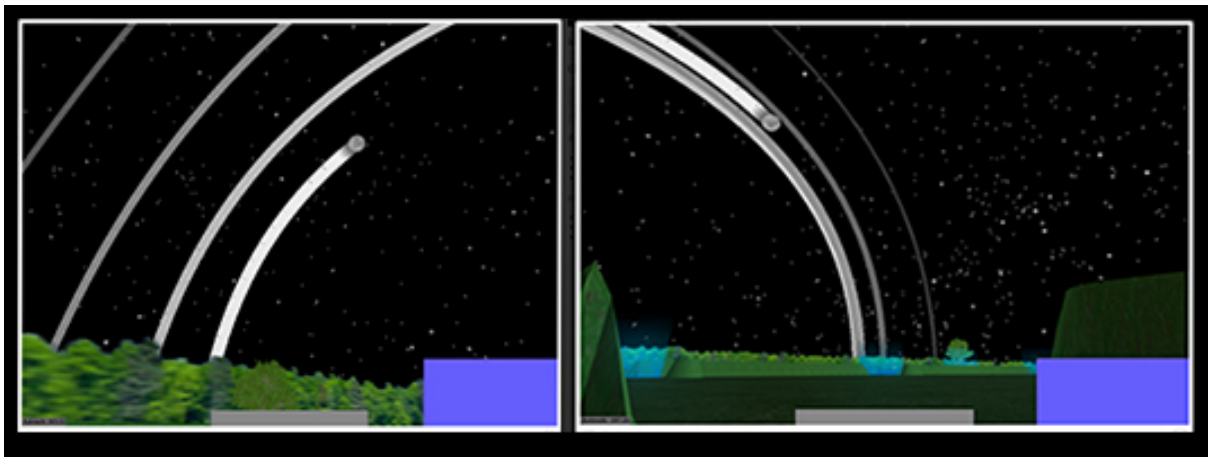

Figure 2

Cultural Representation and Art style

Because we want to avoid stereotypical representations of Native Americans, we opted to create a game that does not represent humans at all. We are focusing on the sky as the primary area and anticipate adding more constellations and supporting narrative and oral storytelling through the companion website in the future. With over 500 Native American Tribes and Nations in the United States, there are multiple stories about the same constellations or parts of familiar constellations. For example, the Big Dipper's bowl is referred to as the Celestial Bear by the Micmac. We are focusing on culture groups from the Northeastern United States since the Newark Earthworks is located in Ohio.

We are using an accurate star map found online which has been modified by Paul Bourke in order to be wrapped to a sphere (http://paulbourke.net/miscellaneous/starfield/). On this star map, with help from our science education consultant, Bill Schmitt, we identified several constellations.

Learning Objectives

Primary Learning Objectives

- "Look up", noticing the stars, moon and spatial relationships with the earthworks
- Experience through simulation that the Earthworks are a ruin of a lunar observatory and the Octagon precisely tracks the northern-most moonrise.
- Gain a sense of the scale of the Earthworks (the great circle =~ 1,054ft in diameter).
- Grasp historical period/concept of timelines (300 B.C.-400A.D.; Middle Woodland Period)

Secondary Learning Objectives

- Challenge and grow knowledge of Native American accomplishments
- Reconsider stereotypes about Native Americans

Working assumptions

- The mounds were built by an indigenous population whose descendants are living today.
- Players will understand Native Americans as sophisticated people who were able to construct a complex, accurate, large-scale lunar observatory.

Notes

Development Blog: http://meet-the-earthworks-builders.posterous.com/. We intend to continue to refine this prototype through playtesting during the summer of 2012 and take it into classrooms in the fall of 2012. We intend to seek additional funding to expand and refine the game as playtesting continues. To provide your feedback, please contact earthworksbuilders@gmail.com. This Flash game is free and available online at: http://earthworksbuilder.github.com/.

Acknowledgments

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