

imaging  
research  
center

# The Mystery of Chaco Canyon

Premiered on PBS

## The Mystery of Chaco Canyon

Since the discovery of the prehistoric ruins of Chaco Canyon, New Mexico, their purpose has baffled archaeologists. *The Mystery of Chaco Canyon* challenges the long-held assumption that Chaco was a center of trade and offers an explanation of the site which reveals the brilliant astronomy of ancient pueblo people.

The one hour documentary, narrated by Robert Redford, premiered nationally on PBS on June 16, 2000. Fifteen minutes of computer animation created at the IRC depict astronomical and other unusual alignments of Chaco, based on the findings of archaeoastronomer Anna Sofaer. Sofaer discovered the "Sun Dagger" petroglyph on Fajada Butte in 1977 and founded a non-profit, interdisciplinary group, "Solstice Project," which has been studying Chaco Canyon for over twenty years. Their research has demonstrated that the large buildings of the Chaco culture are organized in a complex, extensive regional pattern with astronomical and religious implications.



Summer solstice sunrise aligns with the long wall of Pueblo Bonito.



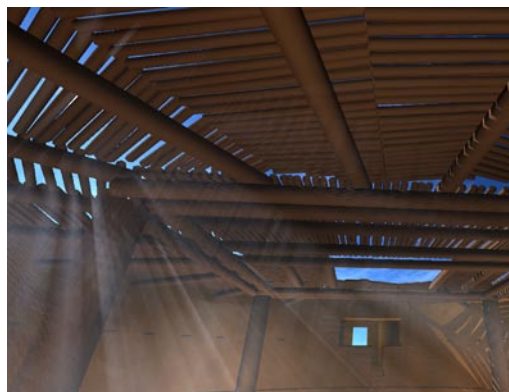
ChetroKettle had over 800 hundred rooms and was 4 stories high.

## Visualization and Animation

IRC Associate Director Alan Price worked with Anna Sofaer during six months of pre-production and planning for the animation sequences in the documentary, which required an additional eighteen months to complete. The animation illustrates not only how the buildings may have looked a thousand years ago, but, more importantly, how the Chacoan culture located and oriented its major buildings in relation to the sun and moon. Sofaer's research into the complex relationships between buildings, roads, and dynamic celestial events is presented in a way that is easy for the viewer to understand.

(over)

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Interior of the Great Kiva at  
Casa Rinconada.

IRC interns worked with data based on archeological surveys of the thousand year-old ruins. Visualization of the geography of Chaco Canyon required the construction of a digital model so large that it had to be separated into sixteen parts and rendered in multiple layers. Rendering required hundreds of hours on the IRC's Silicon Graphics workstations and additional time on one of UMBC's 20-processor supercomputers.

## Awards

As of June 2000, The Mystery of Chaco Canyon has received the following honors and awards:

Premiered on PBS  
Taos Talking Pictures Film Festival Award  
Siggraph '98 Animation Festival

## Production Notes

Director of Animation : Alan Price  
IRC Graduate Research Assistants : Martine Barnaby-Sawyer, Paula Durette  
Animators : Tim Best, Alexsey Zolotaryov  
UMBC Students : Janet Deery, William Maccormack, Matthew Smith, Michael Walsh  
Directed by : Anna Sofaer  
Produced by : The Solstice Project  
Narrated by : Robert Redford  
Written by : Anna Sofaer and Matt Dibble