



DIMENSION

The Newsletter of the Los Angeles Chapter of ACM/SIGGRAPH

January 1999

The Program

6:30-7:30 Social Hour

7:30-9:00 Program

The Location

The Television Academy Theatre 5730 Lankershim Blvd. North Hollywood

Directions

The Academy is located in No. Hollywood two blocks east of the 170 Freeway (Magnolia Avenue exit) in the complex on the northeast corner of Lankershim and Magnolia. Park (\$2 fee) in the parking structure *Note There is no transition from the eastbound 101 to the northbound 170. Exit at Tujunga and follow it north to Magnolia.

Fees/Registration

The event is free to L.A. SIGGRAPH members and \$10 for non-members. New members who sign up on-site and pay the \$25 annual membership fee (checks or cash only) do not have to pay the \$10 registration fee. Members will be given priority from 6:30-7:00. After 7:00 it's first come first served..

Event

Please join us for an evening with DreamWorks SKG as they present *The Prince of Egypt*. The artists will focus on sequences that emphasized the combination of both hand-drawn cel animation and computer generated imagery. The parting of the Red Sea, the relentless plagues visited upon Egypt, the chariot race of Moses and Rameses through the streets of Egypt--these are all familiar images as seen in traditional filmmaking. Come for a behind the scenes look at a new interpretation of a classic tale brought to life by a talented team of animators.



LA Chapter SIGGRAPH Presents

The Prince of Egypt

Tuesday, January 12th.

On January 12, 1999, LA SIGGRAPH will begin the new year by welcoming DreamWorks SKG for a special presentation of the digital and traditional methods used to create the visual effects for DreamWorks' recent animated feature film,

The Prince of Egypt. The program will include discussions by the artists and will provide a behind the scenes peek at the processes used to bring the story to life. In particular, the evening will focus on those sequences that emphasized the combination of both hand-drawn cel animation and computer generated imagery.

The Red Sea

This presentation will describe the process used to create the "miraculous" raising and parting of the waters of the Red Sea as the Hebrews were chased by the Egyptian army.

The studio wanted to have the Red Sea images look like an integral part of the art direction of the film. In order to do this, they built a 3D digital environment that could be enhanced, extended and further integrated into the film through the use of traditional media. Beginning with painted backgrounds and hand drawn elements, the water effects were constructed, animated, rendered, and composited using a combination of several commercial graphics software packages and a suite of programs developed in-house.

The sequence's traditional animation techniques also included an unconventional style of drawn images that could be used both as 2D compositing levels and as 3D CG elements. These drawings could be put into the 3D scenes and rendered in perspective with lighting. In some scenes, they were also used as animating particle system sprites. The CGI animation used both hand animated keyframe techniques and highly procedural geometry and shading animation. Multiple layers of turbulence animation were used to get the

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Meeting Date Change

Tuesday Feb 9th meeting will be held on Friday, Feb 12th

Special Thanks to Michael Seales and Stacey Pauley

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The Prince of Egypt



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complex and organic motion for the water surface and the rendering style was carefully crafted to mimic the background painting style used throughout the film.

The Plagues

This presentation will cover the visual realization of the series of plagues visited upon Egypt following the refusal of the Pharaoh to let the Hebrews leave Egypt.

With the exception of the Plague of Frogs, which was created using 3D character animation married to painted backgrounds, the various plagues were mostly designed, created, and produced using 3D particle systems and 2D CGI techniques involving image processing. The particle system in *Alias* was used extensively, and *Animo* and *Shake* software provided additional visual effects.

The insect swarms were created by applying forces to flowing fields of

particles, which were then combined with the animated characters and painted backgrounds. Particle systems also generated the fiery explosions and smoking vapor trails of the hail of fire, as well as the flowing liquid matte shapes used to change the Nile River from water to blood.

For the final plague, stark rendering techniques were used with the particle systems to achieve the wraith-like, luminous Angel of Death. Additional digital mattes and 2D CGI methods completed the effect by animating the lighting on the surrounding painted background elements in relation to the passing of the 3D rendered particles.

The Chariot Race

This presentation will highlight the combination of traditional animation layout, character animation, and visual effects animation in production of a fast paced action sequence in which

the two brothers, Moses and Rameses, race their chariots through the streets of Egypt.

The sequence relied on extensive use of the studio's 2D/3D layout production tool to create a sense of cinematography by moving a camera through a 3D world filled with both traditional artwork and 2D and 3D digital elements. The tool allowed 2D and 3D visual elements to be moved and positioned together, so that they could be seen through a single camera behaving

like a live-action camera on a set.

The hand painted look of the 3D buildings helped to integrate the moving shots with more static scenes and the 3D alleyway was made to look like any other 2D traditionally painted background. 3D scaffolding was also created to act as animating set pieces that could not only shake and wobble, but breakaway and fall as desired by the directors. Even the 3D chariots and 3D sand wave were carefully digitally painted and rendered to match the hand drawn elements.

Additional Presentations

DreamWorks will also make presentations on the effects used during the Hieroglyph Nightmare sequence, where a young Moses discovers the truth about his childhood from a stunning animation of hieroglyphs on the wall in a temple, and on the generation and behavior of the many crowds seen throughout the film.