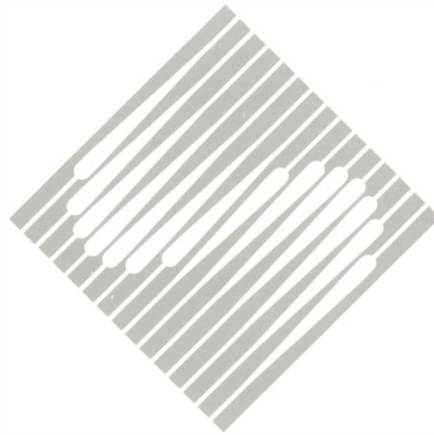# Omnimax

Omnimax

A compilation produced for ACM SIGGRAPH in cooperation with The Science Museum of Minnesota

Producer and Director
Eddie Garrick

Co-Producer
Cal Kirchhof

Executive Producers
Mike Day
Joel Orlen
The Science Museum of Minnesota

Richard M. Mueller
Richard A. Weinberg
SIGGRAPH '84

Sponsors
Control Data Corporation
Cray Research, Inc.
DICOMED Corporation

Film recording by DICOMED Corporation on a DICOMED D-48 film recorder

Filmed in Imax (Imax is a registered trademark of Imax Systems Corporation, Toronto, Ontario, Canada

Constellations

The zodiac and the stars of the northern hemisphere are rendered three dimensionally on the domed screen.

Vibeke Sorensen, Art Center College of Design and California Institute of Technology Computer Graphics Group Software by James F. Blinn.

Colorfalls

Color shifting and swapping patterns, created with an abstracting paint system and color table modulation, fills the screen.

James A. Squires
Software assistance by Jerry Reed, Richard Moszkowski and Ian Macleod.
Computer equipment furnished by Chromatics Inc.

Digital Harmony Sketches at UCLA

This sequence features exploratory works with harmonic visual patterns by John Whitney Sr.'s students.

John Whitney, Bernard Servoulle, Dahna Butnik, Diane Feingold, Phillip Cizewski, Philippe Daniel and Francois Antier.
Principal programmer-Bernard Servoulle, Advisor-James A. Squires and Filming Assistance-Ian Macleod.
Computer equipment furnished by Chromatics Inc.

Nighttrain

This animated, computer designed locomotive with working mechanisms illustrates solid modeling and engineering design techniques.

Bill Charlesworth, Rich Crawford, Joe Cychosz, Dave Plunkett and Steve Van Frank, Purdue University CADLAB.

Acknowledgements—Michael J. Bailey, Purdue University CADLAB; Purdue University Computing Center; John R. Jackson, Control Data Corporation.

Urban Dive and Blueprint Egg

A vector rendering of the Chicago area was used to create *Urban Dive*. An egg rotates through space and draws the audience into its center in *Blueprint Egg*.

Peter Jurgensen.
Thanks to Skidmore, Owings & Merrill.

Anthroman Leaves Town

This sequence features a space flight to the city of Anthroman.

Producer-Steve Legensky, Director-Dan Stipe, Image Generation Software-Charles Lamb.
Fly-in—Steve Legensky, Database and Animation-John Butler.
The City—Modeling and Animation-George Tsakas. Stan Cohen, Todd Rogers and Dan Stipe.
The Glider—Modeling and Animation-Rick Fitzpatrick and Dan Hiepler.
Anthropometric Software, Roland Johnson.
Skeletal Articulation Software by Dave Haumann
Intelligent Light at Austin Electronics.

ADAM's Leap

ADAM's wire frame in motion and the pulsating hemoglobin within create a visual analogy between human and molecular structures.

Arthur J. Olson, Ph. D., Research Institute of Scripps Clinic, Copyright 1984.

Desert Planet Simulation

A Landsat image is warped and wrapped around a sphere to create a planet.

Geometric Productions, Berkeley, California. Director-Charles E. Henderson, Senior Programmer/Mathematician-Agnis Kaugers. This sequence was generated on a CRAY supercomputer. Sinai Satellite Data provided by Earth Satellite Corporation, Starfield data provided by Lucasfilm Ltd.
Special thanks to: John Aldag, Cray Research, Inc.; Bill Samayoa, Cray Research, Inc.; Max Miller, Earth Satellite Corporation; Kawana Estep, Earth Satellite Corporation; Loren Carpenter, Lucasfilm Ltd; Art Paradis, Dynamic Graphics Inc.

Space Station

Fly to a space colony containing buildings from the Caltech campus, as well as the Washington Monument and the United Nations building.

California Institute of Technology—Jim Kajiya Tim Kay, John Platt, Brian Von Herzen. Art Center College of Design—John Beidenharn, Tom Brown, Chuck Esrock, Susan Gipson, Ted Owens, Rebecca Wilmot.
Thanks to: Al Barr, Caltech; Jeff Goldsmith, Caltech; Bob Schaff, Caltech; John Aldag, Cray Research, Inc., Cray Research Inc.
This sequence was generated on a CRAY supercomputer.

Saturn Fly-by

Actual satellite data was used to create this simulated flight to the planet Saturn.

Jeffrey Goldsmith, James T. Kajiya, Timothy L. Kay, Brian Von Herzen. James F. Blinn. Thanks to: JPL Computer Graphics Laboratory, California Institute of Technology Computer Graphics Group, John Aldag and Cray Research, Inc., Bob Williams and the University of Minnesota Computer Center. This sequence was generated on a CRAY supercomputer.

Rollercoaster

A wire grid illustrates the Japanese mountain terrain for this simulated rollercoaster ride.

Digital Effects Inc.—C. Robert Hoffmann, Donald Leich, Judson Rosebush.

Square Root of Seven and The Third Day

Fractal animation of one line creates the final pattern for *Square Root of Seven,* and fractal patterns create the ocean and mountain scenes in *The Third Day.*

Bruce J. Lindbloom, DICOMED Corporation.

The Final Frontier

Simulated cell fertilization illustrates state-of-the-art molecular modeling technology.

Al Barr, California Institute of Technology Computer Graphics Group; Gray Lorig, Rensselaer Polytechnic Institute Center for Interactive Computer Graphics. Special thanks to: John Aldag, Cray Research, Inc. This sequence was generated on a CRAY supercomputer.

Inside a Quark

Travel through an intricate floral labyrinth.

Design, modeling and animation by Ned Greene. Software—Jules Bloomenthal, Paul Heckbert, Ned Greene, Lance Williams. Produced at New York Institute of Technology Computer Graphics Laboratories. Special thanks to: Alexander Schure, chancellor, New York Institute of Technology.

Raster Egg Animation

This sequence features an animated blast off from the surface of an egg.

Animation by Paul Heckbert. Egg Model by Ron Resch, Robert McDermott. Rendering software by Paul Heckbert. Produced at New York Institute of Technology Computer Graphics Laboratories.

Trip Through Molecule of Superoxide Dismutase

This rendering illustrates molecular properties and interaction.

Michael E. Pique, James S. Lipscomb, Anne C. Andersen, University of North Carolina at Chapel Hill. Molecular data by David Richardson, Jane Richardson, John A. Tainer, Elizabeth D. Getzoff, Kenneth Thomas, Karl Beem, Byron Rubin, Duke University. Electric field by Elizabeth D. Getzoff, John A. Tainer. Scripps Clinic and Peter A. Kollman, Paul K. Weiner, University of California, San Francisco. Dot surface by Mike Connolly, Scripps Clinic.

Mathematical advice by Thomas A. Hern, Bowling Green State University and University of North Carolina at Chapel Hill, Nelson Max, Lawrence Livermore National Laboratory. Computing by the Computer Science Department, Microelectronic Systems Lab, University of North Carolina at Chapel Hill and Research Triangle Institute, Research Triangle Park, North Carolina. Additional funding by the National Institute Grant RR-00898, principal investigator, Frederick P. Brooks, Jr. Test Screening-Universe Planetarium, Richmond, Virgina; National Air and Space Museum, Washington, D.C.; Ram Triple Theatres, Villiage Plaza Theatre, Chapel Hill, North Carolina; Yorktowne Theatres, Durham, North Carolina.

Revenge of the Ant

A mechanical ant—a detailed, automated vehicle—climbs out of an anthill and across the screen.

Animation and ant modeling by Dick Lundin. Background modeling by Paul Xander, Jr. Anthill modeling by Lance Williams. Produced at New York Institute of Technology Computer Graphics Laboratories.

Clouds

Computer simulated time lapse photography animates cloud motion over San Francisco Bay.

Nelson Max, Craig Upson, Pat Weidhaas, Lawrence Livermore National Laboratory.

Film Recording Crew

Cal Kirchhof
Joel Neisen
Christopher Boylan
Michael Dirkers
Keven Rounds
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Nelson Max

Storyboard Artist

Tim Braniff

Production Coordinator

James Hunter
GARRICK Films

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Editor

Michael Ornstein
Garage Montage

Music

Vibeke Sorensen
Art Center College of Design
California Institute of Technology