

13th Annual Conference
on Computer Graphics
and Interactive Techniques
Dallas Convention Center
Dallas, Texas
August 18-22, 1986

Sponsored by the Association
for Computing Machinery's
Special Interest Group on
Computer Graphics in
cooperation with the IEEE
Technical Committee on
Computer Graphics

ELECTRONIC THEATRE

Dallas Convention Center
Tuesday, Aug. 19, 7:30 p.m.
Wednesday, Aug. 20, 7:30 p.m.
Thursday, Aug. 21, 6:30 p.m.

Each year, a jury of experienced professionals spends many hours selecting the most outstanding animations for the Electronic Theatre and the Animation Screening Room. Listed below, in alphabetical order, are the selections chosen for the '86 Electronic Theatre. To accommodate everyone attending SIGGRAPH, the program will be presented on Tuesday, Wednesday and Thursday evenings.

The Animation Screening Room, presents selected animations in university, research/technical, commercial and artistic areas, meriting recognition but not included in the evening performances. Located in the West Ballroom of the Dallas Convention Center, the Animation Screening Room will be open Wednesday through Friday, August 20 through the 22, 10:00 a.m. to 6:00 p.m. A list of selections and specific times will be available on location.

Special recognition must be given to the A/V crew members who provide the latest A/V technology and demonstrate the patience and perseverance needed to make the '86 Electronic Theatre and Animation Screening Room really happen.

Sincere thanks to everyone who worked together to make this year's Electronic Theatre and Animation Screening Room successful. We all welcome you to SIGGRAPH '86 and hope you enjoy the industry's latest developments.

ABEL IMAGE RESEARCH "SIGGRAPH PRESENTATION REEL"

The Abel Image Research software, developed over fifteen years of computer-aided image making, has established the company as a leader in the field of three-dimensional synthetic animation. The software provides a coupling of CAD/CAM/CAE systems with advanced computer animation. Images included in this selection have applications in the fields of sales, marketing, engineering, design, education/training and commercial production.

Credits: Abel Image Research
Contact: Pat Rooney
935 N. Highland Avenue
Los Angeles, CA
90038-2481

APOLLO COMPUTER "FAIR PLAY"

This material is a ray traced film about a game of chase between a lady and a gentleman at an amusement park. The piece demonstrates compositing particle systems with ray traced images, limb animation and 3-D texture mapping — all created on a distributed processing network of several hundred Apollo Domain workstations.

Credits: Michael Sciulli, James Arvo and Melissa White
Contact: Michael Sciulli
300 Billerica Rd.
Chelmsford, MA 01824

AT&T LABORATORIES "NEW THREADS"

This animation piece exemplifies current research being done in the modeling and animation of cloth objects.

Animation & Software: Jerry Weil
Contact: Jerry Weil
600 Mountain Avenue
Murray Hill, NJ 07974

CALTECH COMPUTER SCIENCE GRAPHICS GROUP "CALTECH 1986 DEMO REEL"

This film displays results of research by the Computer Science Graphics Group over the last year. Featured are pieces demonstrating new modeling and animation algorithms based on physical simulation, as well as a new rendering technique which extends ray tracing.

Credits: Al Barr, Ronen Barzel, Dave Gillespie, Jim Kajiya, Deven Kalra, Tim Kay, Jon Leech, John Platt, Ernie Sasaki and

John Snyder.
Contact: Al Barr
Caltech 256-80
Pasadena, CA 91125

COMPUTER ANIMATION LABORATORY GMBH "METAMORPHOSIS: ANALYSIS AND ILLUSIONS"

At the computer animation lab in Frankfurt, an innovative state-of-the-art computer animation system was used to produce high quality 3-D shaded computer-generated images, creating the perfect animated effect. These images are used for advertising and special effects, architecture, industrial and environmental design, medical and scientific research, mapping and training.

Credits: Antonios Iliakis, Sandra Edwards, Gabriel Herschdörfer, Arthur McBain, Susan Magnus, Kenneth Wesley, Helene H. Eversbusch, Rex Grignon, Manfred Büttner, Konstantinos Dangakis and Manolis Sideris.

Contact: Antonios Iliakis
Beethovenstrasse 4
6000 Frankfurt 1
West Germany

CRANSTON/CSURI PRODUCTIONS, INC. "SIGGRAPH '86 SHOWREEL"

The people at Cranston/Csuri Productions present a collection of animation produced for advertising agencies, corporate clients and in-house research, as well as for the broadcasting and medical industries.

Credits: Cranston/Csuri Productions, Inc.
Contact: Michelle L. Amato
1501 Neil Avenue
Columbus, OH 43201

CUBICOMP CORPORATION "FENESTRATION"

This piece takes the viewer on a short and surprising trip through the streets and windows of a city neighborhood.

Credits: Michael Beese, Daniel Browning, Peter deVroede, Sara Frucht, David Low, Stuart Phillabaum, Jon von Zelowitz, Wilson Burrows and John Kelsey.

Contact: Peter deVroede
3165 Adeline Street
Berkeley, CA 94730

DIGITAL PRODUCTIONS "SIGGRAPH '86 SHOWREEL"

Some of the most exciting examples of Digital Production's award-winning Digital Scene SimulationSM are shown on this reel.

Credits: Digital Productions
Contact: Stephanie Mardesich
3416 S. La Cienega Blvd.
Los Angeles, CA 90016

DIGITAL PRODUCTIONS "HARD WOMAN"

Superstar meets Super Computer. Rock star, Mick Jagger finds himself in a love triangle with computer-simulated characters — Jagger's alter-ego and "Hard Woman." The landmark piece is the first produced with digital exclusive process — Digital Scene SimulationSM.

Credits: Digital Productions
Contact: Stephanie Mardesich
3416 S. La Cienega Blvd.
Los Angeles, CA 90016

ELECTRIC IMAGE, LTD. "ELECTRIC IMAGE SHOWREEL '86"

Electric Image produces high level 3-D animation for the film and television industries. Electric Image specializes in creating complex textured imagery that attempts to move beyond the traditional use of

computers in graphic design.
Credits: Paul Docherty, Stewart McEwan, Ian Bird, Mike Milne, Martin Foster, Ian McFadyan and Penny Grant.

Contact: Penny Grant
8 Dean Street
London, England
W1V 5RL

EVANS & SUTHERLAND COMPUTER CORPORATION "SIMULATION EXCELLENCE"

All images were recorded in real time (not frame-by-frame animation) from an Evans & Sutherland CT6 computer image generation system. The videotape originally was produced for a simulation training conference and show. Nearly one man year of time was required to design the data base and perform real time scenario recording.

Credits: Evans & Sutherland and Rediffusion Simulation
Contact: Bruce Fox
580 Arapeen Drive
Salt Lake City, UT 84108

HIROSHIMA UNIVERSITY "A VISITOR ON A FOGGY NIGHT"

After sunset, room lights, gate lamps and street lamps turn on in succession. Cars come and go. In a deep fog, a car stops in front of the building. Soon after the room lights go on and off, and then turn off, the car hurries off in the foggy night.

Credits: Eihachiro Nakamae
Contact: Eihachiro Nakamae
Hiroshima University
Saijo, Higashihiroshima
Hiroshima, Japan 724

IBM CORPORATION "DYNAMICS OF $e^{ix(1-x)}$ "

This animation shows the Julia sets defined by the formula $e^{ix(1-x)}$ as parameter x is varied from 0 to 2π . Points in each frame lie on a complex plane and are colored according to the number of tries to iterate to a fixed radius. Multiple processors cooperate to compute these images by a parallel boundary — detection algorithm.

Credits: Wally Kleinfelder, S. Harvey, J. Hall, E. Nowiki, J. Weiss, G. Pfister, T. Kay, M. Tsao and H. Liberman.

Contact: Evelyn Melton
IBM T. J. Watson
Research
H4-D57
Yorktown Hts., NY 10598

IMAGICA COMPUTER GRAPHICS CENTER

"ACME DEMO REEL '86"
This show reel includes a Television Opening Program for Children, using a Vax 11/780, IMI-500, ESS-II and PDP-11/60.

Credits: Tadashi Osima, Izuhiko Suehiro, Masayo Morita, Takahisa Tamogami, Kinji Odaka, Midori Yamada, Yuji Hamajima and Hideki Nakano.

Contact: Kinji Odaka
3-13-6 Higashi-Shinagawa
Shinagawa-ku
Tokyo, Japan 140

JAPAN COMPUTER GRAPHICS LAB (JCGL)

"JCGL DEMO REEL '86"
This reel includes some of the production which was picked up from various kinds of images created by JCGL from the middle of 1985 to the middle of 1986.

Credits: Japan Computer Graphics Laboratory, Inc., (JCGL)

Contact: Takao Shimomura
6-17 Nampo-Dai

Shibuya, Tokyo
Japan 150

JPL COMPUTER GRAPHICS LABORATORY

"THE MECHANICAL UNIVERSE ... AND BEYOND"

Excerpts are shown from the second semester of a one year telecourse designed to teach college freshmen physics. Funded by the Annenberg/CPB project, the "Mechanical Universe" will be airing on many PBS stations beginning fall of 1986.

Credits: JPL Computer Graphics Lab

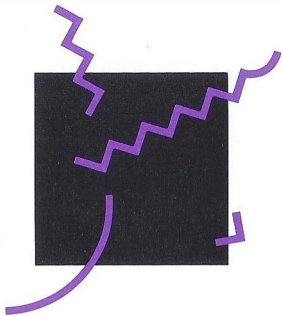
Contact: Don Delson
Caltech 1-70
Pasadena, CA 91125

LAWRENCE LIVERMORE LABS "LIGHT BEAMS"

This film shows light illuminating the atmosphere, filtering through the leaf canopy of a forest, coming from a candle inside a Jack-O-Lantern and coming through the clouds. It was calculated using the CRAY 1, and recorded using Dicom D48C.

Credits: Nelson Max, John Blunden, Jules Bloomenthal, Pat Weidhaas, Craig Upson and Ellen Hoffman.

Contact: Nelson Max
L 301/Box 808
Livermore, CA 94550



NEW YORK INSTITUTE OF
TECHNOLOGY COMPUTER
GRAPHICS LABORATORY
"ANIMATION ASSORTMENT '86"
These animation segments are
recent results of NYIT's ongoing
efforts in computer animation
research. The "User Abuser"
sequences were produced for a seg-
ment of "Entertainment Tonight"
TV Show. "Theme of Secrets" by
Eddie Jobson, on Private Music
Record Label, excerpt from music
video. (Bouncing sphere with poly-
hedra transformations)
Credits: NYIT Computer Graphics
Laboratory Staff.
Contact: Hank Grebe
P.O. Box 170, Gerry
House
Old Westbury, NY 11568

NIPPON ELECTRONICS COLLEGE
"ECOLGY: OCEAN"
This work presents ecological
movement with the "Meta-Ball"
technique combined with texture
mapping.
Credits: Yoichiro Kawaguchi and
members of the Art & Science
Laboratory at Nippon Electronics
College.

Contact: Yoichiro Kawaguchi
1-25-4, Hyakanin-cho
Shinjuku-ku, Tokyo
Japan 160

THE OHIO STATE UNIVERSITY
COMPUTER GRAPHICS
RESEARCH GROUP
"MOTION STUDY"
In this selection, animals and hu-
mans meet on an open plain and
engage in a ritualistic dance.

Animation/Animal
Motion Synthesis: Michael Girard
Animation/Scoring
System Software: George Karl
Contact: Michael Girard
OSU/CGRG
1501 Neil Avenue
Columbus, OH 43201

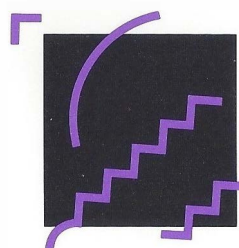
THE OHIO STATE UNIVERSITY
COMPUTER GRAPHICS
RESEARCH GROUP
"VISION OBIOUS"

This piece takes the viewer on a
journey through the subconscious
— experiencing three emotional
states. The emotions are expressed
later through images within a
museum environment with a transi-
tion through a sculptor's head,
i.e. mind!
Credits: Ruedy W. Leeman and
Michael Czeiszberger
Contact: Ruedy Leeman
1501 Neil Avenue
Columbus, OH 43201

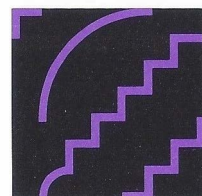
OMNIBUS COMPUTER GRAPHICS
LAB, CANADA
"SERENITY"
Representing SIGGRAPH '86 in
Texas, the animation starts with a
closeup of the wings of the but-
terfly: the SIGGRAPH logo, and
zoom out to reveal a butterfly on a
cactus flower with cactus leaves in
the background.

Animation: Linda Bel, Ron Plante,
Steven Strauss
Editing: Paul Cormack
Software Support: Kevin Tureski,
Carl Frederick, Kim Davidson and
Greg Hermanovic
Contact: Linda Bel
2180 Yonge Street
Trans American Tower
Toronto, Ontario
M4S 2B9
Canada

OMNIBUS COMPUTER
GRAPHICS, U.S.A.
"SIGGRAPH '86"
This reel is a potpourri of work
completed in the past year at the
New York, Toronto & Los Angeles
facilities. The computer generated
space ship matted over live action
is from the PSO/Disney Feature
Release "Flight of the Navigator."
Credits: 1986 Omnibus Staff
Editing: Jeff Kleiser
Contact: Jeff Kleiser
c/o Paramount Studios
Studio G
5555 Melrose Avenue
Hollywood, CA 90038



CONFERENCE CO-CHAIRS
Ellen Gore, ISSCO
Ray Elliott, Los Alamos National
Laboratory
ELECTRONIC THEATRE CHAIR
Michelle L. Amato, Cranston/
Csuri Productions, Inc.
ADMINISTRATIVE ASSISTANT
Deborah Holcomb, Cranston/Csuri
Productions, Inc.



PACIFIC DATA IMAGES
"PACIFIC DATA IMAGES 1986"
This selection demonstrates the
tastiest appetizers, entrées and des-
serts served up by the PDI chefs
from the past year.
Credits: Pacific Data Images
Contact: Shari Folz, Production
Manager
1111 Karlstad Drive
Sunnyvale, CA 94089
PIXAR
"PIXAR DEMO REEL"
#1 — "Beach Chair," A piece of
inexpensive furniture discovers
himself.
#2 — "Luxo, Jr.," The enchanting
story of a lamp & his son.
#3 — "Flags & Waves," Scenic
beauty on a windy day.
Credits: John Lasseter, Bill Reeves,
Eben Ostby, Sam Leffler and Alain
Fournier
Contact: William Reeves
P.O. Box 13719
San Rafael, CA 94913-3719

PIXAR
"COMPUTER GRAPHICS FOR YOUNG
SHERLOCK HOLMES"
A stained-glass soldier comes to
life and leaps from his church win-
dow to terrorize a hapless cleric.
The effect is so convincing that
Gene Siskel thought it was real.
That's how good it is.
Credits: William Reeves, John
Lasseter, Eben Ostby, David
Salebin, Rob Cook, Sam Leffler,
David DiFrancesco, Tom Noggle,
Don Conway and Craig Good.
Contact: Craig Good
P.O. Box 13719
San Rafael, CA 94913-3719

ROBERT BOSCH CORPORATION
"FGS-4000 '86 DEMO TAPE"
This tape is a compilation of work
done by FGS-4000 animators
throughout the world. The
FGS-4000 is an animation, graphics,
and paint system designed and
manufactured by the Robert Bosch
Corp., Video Equipment Division,
in Salt Lake City, Utah.
Credits:
Animatica Spain
Cal Video Graphics London
Moving Picture
Company London
Optimus Chicago
RTL Productions Luxembourg
Rushes London
Videolab/Paint
Brush Co. Australia
Videotime Italy
VOIR Paris
Contact: Susan Crouse-Kemp
2300 South 2300 West
Salt Lake City, UT 84119

SANDIA NATIONAL
LABORATORIES
"HOT AIR"
A peaceful day at a high mountain
lake is pleasantly interrupted by a
visit from an air alien crystalline
pyramid. Following a beautiful sun-
set, a rare sighting of an amphibi-
ous hot air balloon is made.
Credits: John Mareda, Debbie
Campbell, Pete Watterberg, Gary
Mastin and Dennis Ghiglia.
Contact: John Mareda
Div. 2644
Albuquerque, NM
87185-5800

SCHLUMBERGER
"KNOT REEL"
This video was made by combining
computer graphics with computer
vision. Vision lets us automatically
decompose the original texture into
a straight grain pattern, a knot,
and the deformation of the grain
induced by the knot. Graphics are
used to transform and recombine
the pieces in fanciful ways.
Credits: Andy Witkin, Kurt
Fleischer and Michael Kass.
Contact: Andrew Witkin
3340 Hillview Avenue
Palo Alto, CA 94304

JURY
Wayne Carlson, Cranston/Csuri
Productions, Inc.
Indranil Chakravarty,
Schlumberger-Doll Research
Robert Cook, PIXAR/California
Institute of Technology
Nelson Max, Lawrence Livermore
National Laboratory

STUART SHARPE
"AH-VIE"
This video is an attempt to visu-
alize music. The words "AH-VIE"
were taken from a recording of
background sound at Grand
Central Station.
Credits: Stuart Sharpe
Music: Bill Porter
Contact: Stuart Sharpe
325 E. 10th Street
#3E Rear
New York, NY 10009

SOGITEC
"SOGITEC PARIS 1986"
SOGITEC is a French production
house involved for three years in
the design and production of 3-D
computer animation for commer-
cials, TV graphics, industrial and
feature films for the European
market.
Credits: SOGITEC
Contact: Xavier Nicolas
32, Boulevard de la
Republique
Boulogne France 92100

THOMAS DIGITAL IMAGE
"SAMPLE REEL '86"
Commercial and experimental
computer animation all produced
with TDI software on a Gould
32/9780, are featured on this reel.
Credits: G. Allain, F. Janssen,
C. Scipion, P. Bap, J. Hourcade,
I. Fahmy, P. Sitbon, M. Prieur,
Y. Violin, H. Loizeau, C. Chaix,
C. Fouche, and D. Pochat.
Contact: Frédérique Janssen
41, rue de Washington
75008 Paris, France

TOKYO KOGAKUIN COLLEGE
OF ART
"DOGUMASTER"
The computer graphics shown in
this piece were produced by the
Tokyo Kogakuin College of Art.
All frames are calculated on a 9801
personal computer.
Credits: Tokyo Kogakuin College
of Art
Contact: Hiroshi Nara
Yoyogi 1-35-4
Shibuya, Tokyo
Japan 151

TOYO LINKS CORPORATION
"TOYO LINKS '86 DEMO REEL
FOR SIGGRAPH"
Using "Tracy," ray tracing software,
liquid shapes can be described like
liquefied natural gas by Meta-
ellipsoids. The Meta-ellipsoids are
extended techniques for creating
organic objects & motion.
Credits: Takasi Fukumoto, Hirojuki
Hayashi, Michiko Shuzuki,
Tomoko Myochin, Taku Kimura,
Eiko Miyabayashi, Keiji
Yamaguchi, Moto Moriyuki and
Art Durinski.
Contact: Koji Ichihashi
3-13-6 Higashi-Shinagawa
Shinagawa-ku, Tokyo
Japan 140

UNIVERSITY OF CALGARY
"SOFT II"
Soft objects (of blobby molecules)
cooperatively establish a contin-
uous closed surface (bubbling green
goo) but are viable on their own
("Soft" indicates itself). They are
flexible and remain coherent under
stress, (up the stairs and bouncing).
Indeed they possess qualities essen-
tial to living forms.
Credits: B&G Wyvill,
C. McPheeters, D. Jevans,
D. Hankinson, J. Allan, R. Garbutt,
D. L. Maulsby, ComMedia and
University of Calgary.
Contact: David Maulsby
Department of Computer
Science
2500 University Drive,
N.W.
Calgary, Alberta T2N 1N4
Canada

VICTOR COMPANY OF JAPAN
"OBELISK"
An aesthetical time and space is
constructed using the Japanese
Noh stage and Noh masks.
Credits: J.V.C. & Thanks to the
National Noh Theatre
Contact: Takeshi Shibamoto
Audio Engineering Res.
Center
Shimotsuruma, Yamoto
Kanagawa, Japan 242

A/V
Doris Kochanek, National Film
Board of Canada
The Video Research Consultants
*OPENING ANIMATION SEQUENCE
FOR THE ELECTRONIC THEATRE*
Cranston/Csuri Productions, Inc.
*ANIMATION SCREENING ROOM
TITLE SEQUENCE*
Universal City Studios, Computer
Graphics Department