

D I M E N S I O N

May 1996

The Los Angeles Chapter of ACM / SIGGRAPH Newsletter

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JET PROPULSION LABORATORY

VON KARMEN AUDITORIUM, 4800 OAK GROVE DRIVE, PASADENA

WEDNESDAY, MAY 15TH, - SOCIAL HOUR 6:30 PM - PRESENTATION 7:30 PM

FEES: \$1 LA SIGGRAPH members / \$5 non-members. If you have not picked up your membership card, or you are a new member, please pick up your card at the membership table. Membership ID will be required for priority entry and reduced admission to meetings - Members with lost or forgotten cards must verify membership status at the membership table. **Note:** Members who paid the new rate of \$25 annual fee (effective Jan 1996) will be admitted free.

DIRECTIONS: See page 2 for map and detailed directions. From the 210 in La Canada, exit at the Berkshire Ave / Oak Grove Drive exit. Follow signs to NASA / JPL. Park in lot to the left of the guard booth. Follow signs to Von Karmen auditorium.

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Our May meeting is a presentation from the Visualization and Earth Science Applications (VESA) group at the Jet Propulsion Laboratory/NASA. The topics include visualization of Earth-approaching asteroids, automated speech visualization, image processing for terrain flyover and a faster, better, cheaper animation system. Our speakers are Zareh Gorjian, Jeff Hall, Dave Kagels, Shigeru Suzuki and John Wright. The VESA group supervisor is Ken Scott.

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Zareh Gorjian holds BS and MS degrees in computer science specializing in computer graphics. Prior to JPL, he worked for a computer game company. Since 1990, he has worked at JPL designing and implementing renderers and illuminations models as well as creating animations. He has worked on two IMAX movies, "Destiny In Space" and "L5: First City in Space" and developed an animation for the MUDSS task. He has assembled an animation system based on Lightwave 3D, Windows NT (Intel and Alpha) and the Perception video recorder. The system has been used successfully in production. A comparison will be presented between two different systems for producing animations. Rendering quality, price, and system speed of the Lightwave based system will be contrasted with a Wavefront, SGI system, and Abekas Digital Disk recorder.

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Jeff Hall holds a BA in Geography from UC Santa Barbara specializing in remote sensing, digital image processing, and cartography. He worked at the NASA Ames Research Center for 2 years. He has worked at JPL since 1984 producing special animation products for the NASA/JPL flight projects Voyager, Magellan, and the Hubble Space telescope. He has also animated scenes in

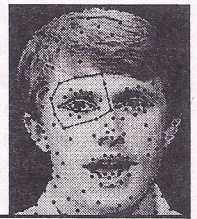
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four IMAX productions "Blue Planet", "Journey to the Planets", "Destiny in space", and "L5: First City in Space". He is currently working on producing stereoscopic images for HDTV and IMAX as well as applying IDL to analyze NASA Earth Observing System science data. An overview of the image processing necessary to prepare remotely-sensed data used in the production of animations will be presented. Examples of terrain image and elevation data will be shown with regard to raycast rendering. Preparation of data includes color and cosmetic manipulation, and elevation de-spiking, filtering and filling. Coloring options include pseudo, false, hsi transforms, 2 for 3, and 2-1/2. Cosmetic and filling options include coloring special areas and water, noise removal by filtering and graded image subtraction, backfilling with large area tone matching. Examples will include images and animations from the Magellan, SIR-C, Kidsat, Landsat, Viking Mars Obiter projects.

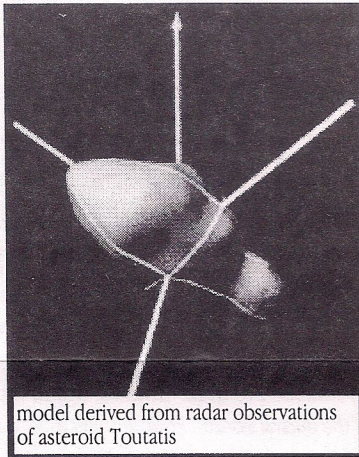
Dave Kagels holds a BS in Computer and Systems Engineering from RPI and is working on his MS in Computer Science at USC. Since joining JPL in 1991, Dave has developed interactive tools and advanced morphing algorithms for the ASV (Automated Speech Visualization) task. Recently he has been developing rendering and animation software for use with remotely-sensed data. The Actors system, developed under the ASV task, provides the capability to render realistic appearing,

but computationally produced, animations of a human head speaking. Basic steps of this process will be discussed, including tiepointing, grouping, and morph sequencing and control. A number of animations demonstrating the results of this technique will be shown.



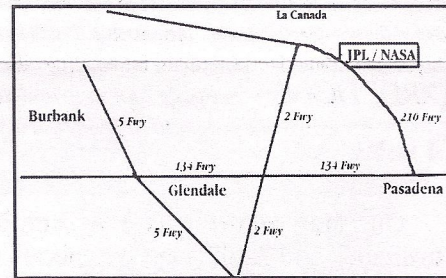
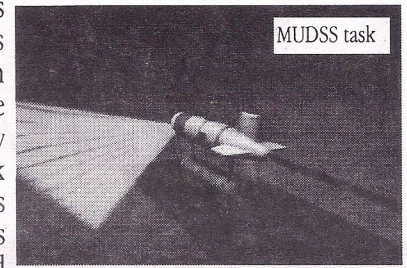
Automated Speech Visualization

Shigeru Suzuki holds a BS in Electrical Engineering from Tokyo University of Agriculture and Technology. He worked as a computer graphics engineer and broadcast/HDTV video engineer for 12 years for the Japan Broadcasting Corporation (NHK) in Tokyo. Since 1991, at JPL, he has worked on various spacecraft simulations including Galileo, Magellan, and Ulysses as part of the Solar System Visualization project. He has also animated scenes for three IMAX productions "Journey to the Planets", "Destiny in space", and "L5: First City in Space". He is currently working on the visualization of Earth-approaching asteroids for the New Millennium Project. Various visualization of the asteroids will be demonstrated including their shapes, rotations, orbits of the particles around the asteroids, and the impacts to the asteroids. These visualizations are based on the actual observations or simulations by the scientists.



model derived from radar observations of asteroid Toutatis

rithms for flight simulators for 9+ years at Hughes Aircraft. Since 1994, John has worked at JPL on the ASV task and is currently leading the MUDSS task (Mobile Underwater Debris Survey System) which seeks to provide data fusion and visualization capabilities for location, identification, and cleanup of unexploded ordnance in shallow water. Emphasis is on data fusion, data mining, and visualization of sonar and magnetic field data. John will also present the Realscene system and rendering algorithm, demonstrating the system's capability in real-time and non-realtime.



From the 134 East in Glendale, take the 2 north, stay in the 2 right lanes to the 210 east. From the 210 exit at Berkshire Ave. / Oak Grove Drive. Turn left on to Berkshire and left on Oak Grove Dr. Take road to end and park in visitor parking on left.

Announcements...

RHYTHM & HUES STUDIOS has positions open in the following areas: **Animation Director, Technical Directors, Programmers.** Rhythm & Hues Studios, Attn: Brad Reinke, 5404 Jandy Place, L.A., C.A. 90066 - phone (310) 448-7593 or email brad@rhythm.com.

ALIAS | WAVEFRONT is currently taking applications for June & August beginning Alias Animation classes at Silicon Studio. 12 week format will allow you to learn the basics of animation, modeling, and rendering. To receive an application by fax or mail, please call Dianne at 310-914-1566 or register on line at <http://www.studio.com>.

METROLIGHT STUDIOS is looking for **Animators/TDs**, 2 years experience and up. Knowledge of at least 2 of the following softwares: Alias, Wavefront, Prisms, Renderman. Send demo reels and resume to: Production Administration, MLS, 5724 W. 3rd St., #400, L.A., CA 90036. **Software Developers**, must know production environment, understand image processing, 3D tools, R&D, and production support, C and C++. Fax your resume to: (213)932-8440, or email to resumes@metrolight.com.

ELECTIONS!!! L.A. SIGGRAPH PRESENTS THE CANDIDATES RUNNING FOR OUR EXECUTIVE COUNCIL POSITIONS. MAIL YOUR ENCLOSED BALLOT BEFORE JUNE 21ST OR BRING TO OUR JUNE MEETING. RESULTS WILL BE ANNOUNCED IN OUR AUGUST NEWSLETTER.

Chair: Aliza Corson, current and past co-Chair and Vice-Chair of L.A. SIGGRAPH is an EFX Technical Director at Walt Disney Feature Animation. She has worked as a Technical Director / CG Animator for Metrolight Studios, Pacific Data Images, In Sight Pix and the Computer Film Company.

Vice-Chair: Genny Yee, current Vice-Chair and past Secretary of L.A. SIGGRAPH, has been working as a computer graphics animator in the film and television industry for 5 years. She is currently at Warner Brothers Imaging Technology as part of the visual effects crew for "Eraser".

Vice-Chair: Bradford Jorgensen, currently coordinating all operations for Viewpoint Datalabs in Southern California. He operates the Cyberware Scanner for Viewpoint in their new Venice Technology Center. He has served on the SIGGRAPH Executive Council for the last year as a program coordinator.

Treasurer: Michael Seales, current and past Treasurer of L.A. SIGGRAPH, is a software engineer for the Feature Animation division of Dreamworks Digital Studio. Previously, he worked as a software engineer for TRW.

Secretary: Claudia Sumner, current Secretary of L.A. SIGGRAPH, is the owner of a video production company and a computer consultant. She has been a senior Technical Director, Visual Effects Supervisor and Production Manager on a variety of feature films and commercials

Secretary: Steve Hwan is training to be a Technical Director at Walt Disney Feature Animation. Prior to Disney, he received a B.S. and M.S. from Caltech, then worked for 4 years at the Image Processing Lab at JPL in Pasadena, followed by a brief stint at RGA/LA.