

DIMENSION

The Newsletter of the L.A. ACM/SIGGRAPH Chapter

December 2000

L.A. ACM/SIGGRAPH Presents
Monday, December 11th, 2000

The Program

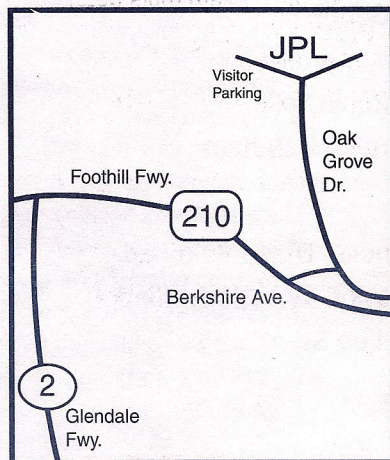
6:30-7:30 Social Hour
7:30-9:30 Program

The Location

Jet Propulsion Laboratory
Von Karmen Auditorium
4800 Oak Grove Drive, Pasadena

Directions

From the 210 East (in La Canada), exit at the Berkshire Avenue/Oak Grove Drive Exit. At the end of the ramp (stop sign) make a left turn onto Berkshire Ave. The street will end at a "T" section. Make a left turn onto Oak Grove Drive. Proceed straight on Oak Grove Drive until you reach JPL. Park in the lot to the left of the guard booth. Follow the signs to the Von Karmen Auditorium.



Fees/Registration

The event is free to L.A. ACM/SIGGRAPH members and \$10 for non-members. Members and new members who sign up on-site will receive priority to this event. New members who sign up on-site and pay the \$35 annual membership fee (checks or cash only) will not have to pay the \$10 fee. As space permits, non-members will be admitted beginning 10 minutes prior to the presentation for the \$10 fee.

What's JPL Been Up to Lately?

The Event

JPL has a long and distinguished history in computer graphics, image processing, and scientific visualization. Starting with the pioneering work of Jim Blinn, JPL has been at the forefront of using computer graphics as an integral component of scientific exploration. Many of the images that define our view of both the Earth and outer space were created at JPL. Join us at the December meeting to see the latest from around the solar system!

Presenters Dr. Eric De Jong, Shingeru Suzuki, Jeff Hall, Steve Levoe and Zareh Gorjian will cover topics including:

Images from the Mars Global Surveyor of the Martian surface and atmosphere

Galileo images of Jupiter's atmosphere and the surface of its moons

Images of Earth from Terra and the Earthkam

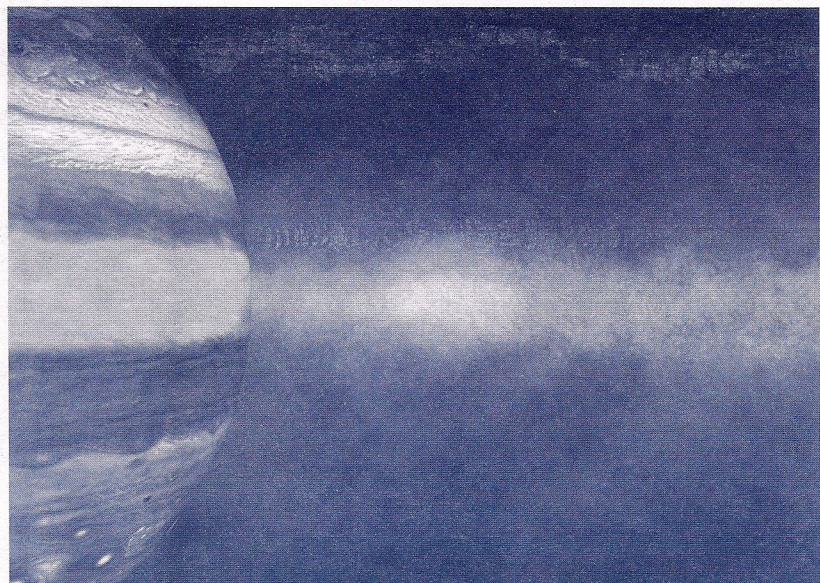
Solar image from SXT and TRACE

LASCO images of solar coronal mass ejections

Mars Pathfinder and FIDO field tests

Preparations for the the 2004 Mars Exploration Rover mission

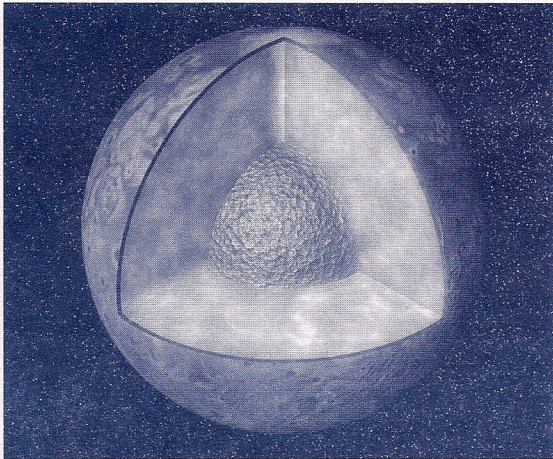
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Jupiter Rings

ZGorjian 2000

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Core

ZGorjian 2000

Much of the presentation will use HDTV technology, which has become the standard at DIAL, the Digital Image Animation Laboratory. Included will be some 3D stereo HDTV sequences.

Besides viewing current work, we'll also see how JPL produces and uses computer graphics. The "behind the

scenes" information will include how graphics are used for mission planning and how scientific results are turned into images. Like any facility JPL must cope with limited time and budgets, and therefore is making greater use of "off the shelf" industry standard software. Find out how graphic effects can be used for scientific visualization and the price performance of various hardware and software systems.

Speaker Profiles

Dr. Eric M. De Jong is a Planetary Scientist working in the Earth and Space Sciences Division of the NASA Jet Propulsion Laboratory and a Visiting Associate in Planetary Science at Caltech. For the last three decades his research has focused on the scientific visualization of planetary surfaces and atmospheres, and the evolution and dynamics of planetary systems. As the Principal Investigator and Project Scientist for NASA's Solar System Visualization (SSV) Project he leads a team of scientists and technologists responsible for developing new science visualization technologies, images and animations. Dr. De Jong and his team create image and animation products from NASA Space & Earth Science remotely sensed data. The images

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Animation

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SGI Workstations

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and animations describe new discoveries and mission plans for NASA's exploration of the solar system.

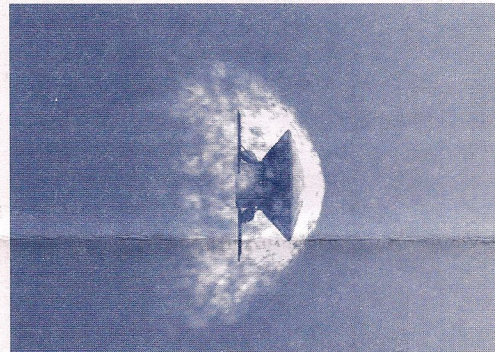
Shigeru Suzuki has been working for the Solar System Visualization project at JPL since 1991. He has been creating many scientific visualizations in various formats including IMAX and HDTV. He has been in charge of designing and implementing the 2D and 3D HDTV video system for scientific visualization. Before working at JPL, he has worked at Japan Broadcasting Corporation (NHK) in Japan as a video engineer from 1979 to 1991.

Jeff Hall has been at JPL for 16 years. He graduated from UC Santa Barbara with a bachelors degree in Geography. His work at JPL includes data analysis, applications programming and terrain flyover-type animations including scenes in four IMAX films. He has worked on numerous planetary and Earth observing missions.

Zareh Gorjian has a bachelors and masters degree in Computer Science, both specializing in Computer Graphics. He has written a number of ray tracing and scanline renderers over the past 10 years. He wrote real time OpenGL based renderers used to preview terrain flyover animations at the Digital

Image Animation Lab (DIAL). He's also worked on optimizing the in-house ray cast renderer used for animating very large terrain data. During the past 5 years he's introduced low cost high quality output animation products to JPL and the DIAL. These include LightWave3D for animation and DPS Perception and Hollywood systems for NTSC output of animations. Zareh has worked on three IMAX movies and numerous press released animations and stills for various planetary and Earth observing missions. Email: zareh.gorjian@jpl.nasa.gov

Special Thanks to Joan Collins Carey, Diane Piepol, Alan Botvinick, Catherine Quinn, Mitch Wade, Zareh Gorjian, and Dr. Eric De Jong.



Mars Atmosphere Entry

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