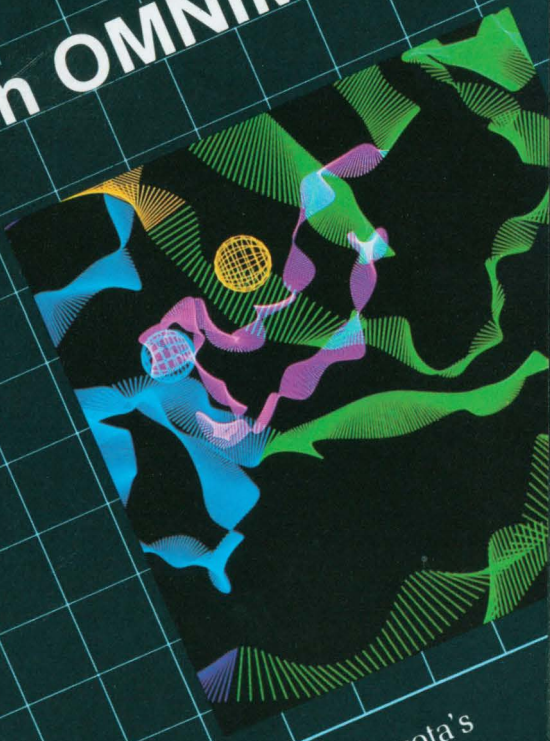# COMPUTER GRAPHICS

in OMNIMAX®

The Science Museum of Minnesota's
William L. McKnight-3M   221-9400/9454
OMNITHEATER

Ask dozens of computer graphics animators and artists to contribute their best computer-generated imagery to be woven into a film that can only be shown using their techniques. Join their considerable graphic skills to the vast format of OMNIMAX˙ and IMAX˙ film. Now, audiences throughout the world can be shown a whole new world through the world's most exciting film format.

This 15-minute film is a cluster of 20 computer animation sequences. You are part of a simulation of a deep space voyage past Saturn, a flight through city buildings, a digital roller coaster ride. You tour a space colony and investigate a molecule. You live and move in a vision not limited by the constraints of physical reality.

It is a demonstration film. How accurately can the computer graphics animator simulate reality not only in form but also in motion and three-dimensionality? In many instances, you will know the imagery is synthetic only because you know it could not have been photographed. This film says that what can be imagined or theorized can be created, even if it can't be photographed. If that's not art, it's something very close.

Producing 15 minutes of film with synthetic images takes time. If this entire film had been computed on a standard home computer, it would have taken 825 years. The world's fastest computers were used for several of the more complex sequences.

Also, the sheer amount of data needed to describe the imagery is overwhelming. One computer tape can hold only enough information to describe 17 frames—two-thirds of a second of animation. Over two million feet of computer tape was needed for the 15-minute film.

Remember too that the domed OMNIMAX˙ screen distorts a flat image. A mathematical description of that distortion must be applied to the images by the computer before they are recorded on film. The result is a film that is almost distortion-free.

This film makes its world premiere in the William L. McKnight-3M Omnitheater. The sequences were contributed by members of the Association for Computing Machinery Special Interest Group on Computer Graphics (ACM/SIGGRAPH). The film was produced by ACM/SIGGRAPH and the Science Museum of Minnesota in conjunction with the 1984 annual conference of ACM/SIGGRAPH held in the Twin Cities.

Flight through a Molecule. Michael Pique and James Lipscomb, University of North Carolina, Chapel Hill, N.C.