Entirely computer-generated, the scene on this month's cover depicts CRTs, which in turn display video pictures of the scene in which they appear. The CRTs, together with the planar array of red, green, and blue dots representing the color primaries of raster graphics, are of course basic to the theme of this month's issue—computer graphics. The COMPUTER logotype, also computer-generated, reflects an environment in front of the cover scene in its mirror-like, "polished chrome" surface.

Produced by the Motion Picture Project of Information International, Inc., of Culver City, California, the scene was generated using techniques similar to those used to generate the "sphere environment" scene on the cover of the March 1978 issue of Computer (see "About the Cover," p. 4 of that issue). For both covers, the project worked with special effects programs and III's FR80 and Grafix I computer systems, which provide high-definition film recording of computer-generated scenes.

Creation of this month's cover began with a design concept developed by the project's creative group. The project team next built a data base consisting of a series of data points representing the 3D space coordinates of the scene's simulated objects. The team used two methods of surface representation for the data base: scene specification—bicubic patches and planar polygons. The cover scene specifications included 300 patches and 5000 polygons. With the scene and its objects now represented in the data base, the designers were able to manipulate the objects to produce the desired final scene, via III's Director's Language. This language, also described in the March "About the Cover," permits designers to select and locate objects, choose their size and orientation, and specify their lighting, reflections, and textures. The language makes the design process dynamic—designers can interact with the scene and its elements by means of monitor output and commands to the system.

The final step—filming—completed the process. The project used a high-resolution "electronic imaging/process camera" system for film recording. The result was a standard transparency, which Computer then processed in the usual manner to produce this month's cover.

The Motion Picture Project is currently using digital simulation tools to synthesize and animate scenes derived from 3D picture data bases, with scanned-in photography for special effects. Their computer-generated graphics are used in the entertainment and advertising industries. This year, for example, they produced two widely seen computer-generated scenes—the CBS 50th anniversary logo and the lead-in for the same network's fall season spots.

According to Franklin C. Crow,* the project's techniques represent "the state of the art in the production of computer-generated shaded images." To a careful observer, a comparison of our March and November covers may reveal just how quickly that art is advancing.