The beautiful orchids on this month's cover are part of a computer graphics video show created by Jo Ann Gillerman, president of Viper Optics in Oakland, California.

Art seeking a computer

Gillerman started out painting and sculpting, but she soon found her drawing and painting tools were inadequate for what she visualized. In those media she couldn't have motion, and she couldn't make moving colors. So about 10 years ago she took to the computer and started experimenting. Her work has been featured at SIGGRAPH for four years now, and SIGGRAPH 86 had her installation in the Art Show, plus her multimedia videotape show in the Electronic Theater. The cover orchids came from that videotape. "With the computer," says Gillerman, "I can do things that don't exist in the real world and manipulate them quickly and easily, going through many permutations."

Color and lighting have always fascinated her, and with the computer she does some extraordinary things. In the cover image you seem to see only one large orchid, but it is actually three orchids superimposed on one another. You can see Gillerman's careful work with coloring in the delicate antique rose hues of the top orchid. In this videotape, she plays with orchids in many different ways (see Figures 1a and 1b). She makes their parts actually dance as pieces in a kaleidoscope. Then in Figure 2 you see the addition to the orchid of
male forms. As the videotape progresses, the orchids finally become less and less important (Figure 3) and the male forms finally predominate (see Figure 4). Examples of Gillerman's more vivid use of color can be seen in two images from animation shown in Figures 5a and 5b. And finally in Figure 6 you see an entirely different orchid, which was animated using the cel-by-cel technique. It is the primary image in the video show called Orchid.

The show is really a new art form. The stage is set with three screens: one center stage measuring $15' \times 20'$ and two on the sides of the stage measuring $20' \times 20'$ each. Slides dissolve on the two side screens while a live performer takes center stage under the center screen. This is all done to live music, and Gillerman coordinates the entire thing in real time.

Right now, she says, that is a very fast-paced and difficult job, so she is working on a new system that would combine video and music, using a synthesizer for the music.

Tools

Gillerman does most of her work on an Aurora 125, because of the excellent paint system. She has also used the Aurora 75 and is currently doing some beta testing for Electronic Arts of programs it is writing for the Amiga. She would like to see that machine made more adaptable to videotape work.
All the pictures you see here were shot right off the screen with a Dunn camera. She also uses a Fairlight CVI (computer video instrument) and a Fairlight CMI (computer music instrument) for showing her multimedia performance.

To create the orchids and male bodies, she worked on 20 orchids and some male bodies, then took them and processed them into the final videotape. She uses what she calls real and synthetic color. The synthetic colors are created with the object and can easily be changed. The real color is black and white frames which she shoots in RGB with three passes, one for each color.

Obviously Gillerman does more than just the collection of orchids shown here, but because she has been working most recently with them, you get a chance to see how many things can be done with orchids alone.
Figure 6.

Legacy

And all these discoveries of things to do with theatrical computer graphics are liberally shared with students at the California College of Arts and Crafts, where Gillerman has taught for a number of years and is now head of the Film and Video Department.

The future

Gillerman’s first project for the future is to take this multi-image, live show and computer graphic animated video show around the world. But there is more going on in her busy head. She is starting work on a feature-length horror movie in her position as president of Viper Optics. This will come right on the heels of a four-minute music video, called Electric Dream, which has been picked up by Paramount for distribution through the home video market. Obviously this is a name we will all see again and again as interest in computer graphic animation grows and as Gillerman continues to experiment with her multimedia videotape shows.

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