A Flexible Virtual Planetarium

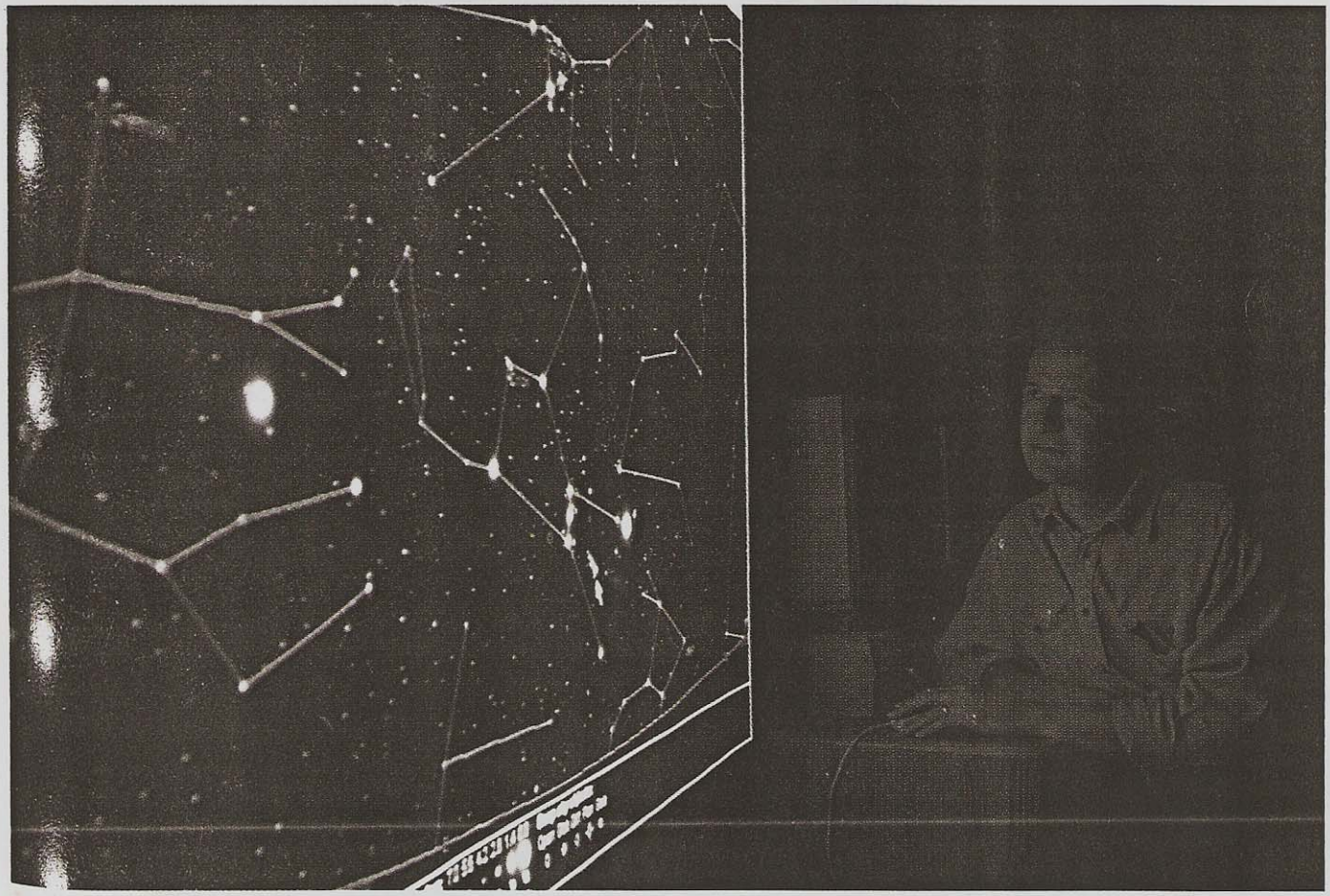
You don't need a domed ceiling to conduct an indoor sky show for your local school or astronomy club. | **By Victor L. Badillo**

THE ONLY CHANCE MOST PEOPLE living in urban areas will get to experience the majesty of a starry night locally — albeit in a vicarious sense — is by attending a planetarium show. When light pollution has obliterated all but the brightest stars from the real sky, a faithful rendition of the celestial sphere projected onto the interior of a darkened dome offers a city dweller the means to connect with a star-studded sky.

A planetarium is a powerful and fun tool for learning and experiencing astronomy. Faithfully reproducing the night sky on the interior of a large hemisphere calls for an elaborate projection system with precisely positioned lenses and intricate mechanisms to replicate the movements of the stars, Moon, and planets. To satisfy the desires of young audiences for multimedia presentations, planetarium directors have found that they have to augment astronomical presentations with space travel, documentaries, and even science fiction. This requires multiple synchronized projectors and other equipment to provide sensory experiences and to do justice to the existing concave screen.

Unfortunately, not every city has the luxury of a planetarium for its citizens. The traditional structure is often a single-use building, frequently an architectural landmark, almost always a tourist attraction — and particularly expensive to build, staff, and run.

Granted, there are smaller alternatives,



Using a liquid-crystal-display (LCD) projector to display a computer simulation of the night sky on a screen can be a viable substitute for a conventional planetarium. The audience is deprived of the full-sky panoramic experience of the hemispherical ceiling, but this is more than compensated for by the flexibility and realism of modern astronomy software packages. *Sky & Telescope* photograph by Craig Michael Utter.