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Loren Billings, director of the Holographic Center, and John Hoffman, director of research, prepare an exhibit at the center.

Science sheds new light on holography

By Celeste Busk

Suddenly holograms are entering a new dimension. National Geographic magazine stoked the fire of popular interest in the scientific art form last year with its revolutionary hologram cover of an eagle.

Recently, the magazine fanned the flames with a second cover illustrated by holography—a three-dimensional view of the fossil skull of a 5-year-old child.

Holography is the science of breaking up light and re-creating a real-life three-dimensional image on film. Millions of Americans carry holograms in their wallets. Credit card companies use the images to prevent counterfeiting. Visa carries a flying eagle, while MasterCard has an "M-C." Checkout counters of some major grocery store chains use holographic scanners to ring up grocery bills.

But these practical applications of the science are child's play compared with the space-age, state-of-the-art displays at Chicago's Museum of the Fine Arts Research & Holographic Center, 1134 W. Washington.

An old 10,000-square-foot loft has been transformed into a magical theater where the museum combines exhibition space with educational facilities. A small gift shop sells holograms priced from \$1 to more than \$175. Also available are 12-by-16-inch holographic portraits for \$3,500.

"There are other holographic teaching systems, museums and research centers to be found, but there is not one central complex like this one in the world," said Loren Billings, executive director and founder of the center.

The center is host for two major exhibitions each year. "Lightscapes 85," on display until January, features holographic artworks by American, European and Scandinavian holographers.

The museum's permanent collection in the Ornelass Gallery features eight holograms from England and one from Sweden. Another gallery contains about 40 holograms, and an entry foyer boasts four more. There also is a special exhibit explaining holography.

A stroll through the dim light of the museum gives a visitor a three-dimensional look at Mickey Mouse, a hologram by holographer Nick Phillips. Not far away an ancient Chinese horse stampedes toward

viewers.

"In its simplest terms, holography is the ability to produce representations of anything in its full dimension, down to its molecular exactness," Billings said. She expects that in the future we will be able to watch holographic television and send holographic portraits of ourselves to friends.

"Actually, a hologram is like a prism or instrument in the sense that it will break up white light," she said. "All holograms are transparent; photographs are not. They [holograms] are like lenses with a memory. When the light strikes the uncoded information, it reveals the original scene."

The science began 37 years ago when Dr. Dennis Gabor conceived the idea of holography. Decades later, in 1971, Gabor received a Nobel Prize for his pioneering work on the "interference phenomenon dependent on the wave nature of light," Billings said.

Billings started Chicago's only holographic museum in 1986 with the goal of displaying holography, and encouraging its advancement and development through teaching and research facilities.

"We also wanted to educate the general public in order to bring about a better understanding and appreciation of the science," she said.

The University of Illinois at Chicago, Columbia College and the city college system recognize grades received at the center in their degree programs, Billings said. The Illinois Institute of Technology permits its students to attend the center for credit.

The center is engaged in a series of joint venture courses in holographic interferometry and pulsed holography with the chemistry and physics departments of Northwestern University.

Some 600 students have received instructions in holography and other assisted subjects—optics, photochemistry, interferometric holography, pulsed holography and the physics of light at the school.

"The center has three separate and fully equipped lab facilities that are devoted to class use from the beginning introductory level to the most advanced," Billings said.

Approximately 8,000 people visit the museum annually. Museum hours are 12:30 p.m. to 5 p.m., Wednesday through Sunday. Admission is \$2.50. A tour led by a staff member costs \$3.50. For more information call 226-1007.