

THE WITCH AND THE DEVIL

Robert Schinella

1973

Transmission; projected image

25½" x 37½" 65 cm x 95 cm

Facility: McDonnell Douglas, St. Charles, Missouri

Collection of the artist



EGGHEAD

Michael Foster

1978

(White light) dichromate

8" x 10" 20.32 cm x 25.4 cm

Facility: Artist's laboratory

Collection of Linda Lane



HARMONY

Kazuo Hanano

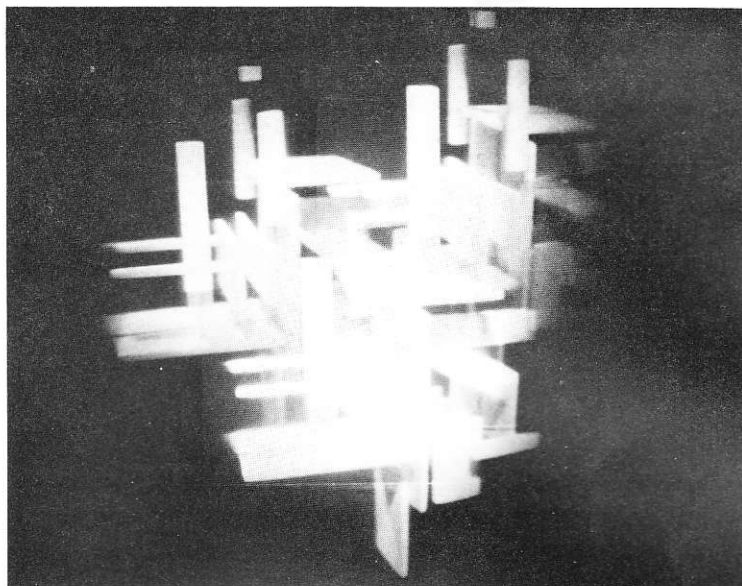
1979

White light transmission

16½" x 14½" 42 cm x 37 cm

Facility: Holomedia Laboratories

Collection of Holomedia, Inc.



SPACE FACE

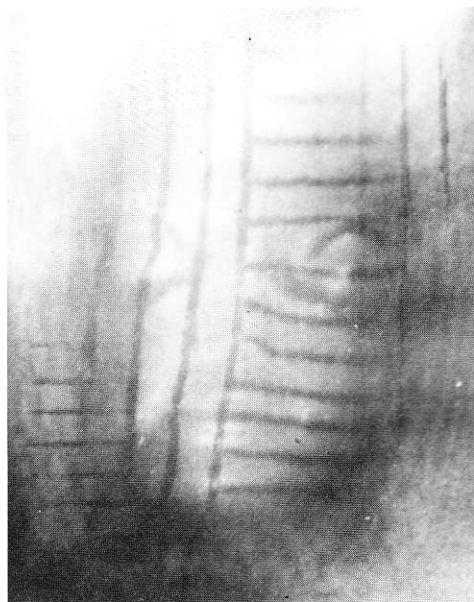
Anait Arutunoff Stephens

1976

White light reflection/pseudoscopic

8" x 10" 20.32 cm x 25.4 cm

Collection of the artist



SPACE DAISIES

Anaït Arutunoff Stephens

1978

White light reflection/orthoscopic and pseudoscopic

16" x 15" (12 plates) 40.64 cm x 38.1 cm

Collection of the artist



CREME DE MOTION, #8

Scott Nemptow

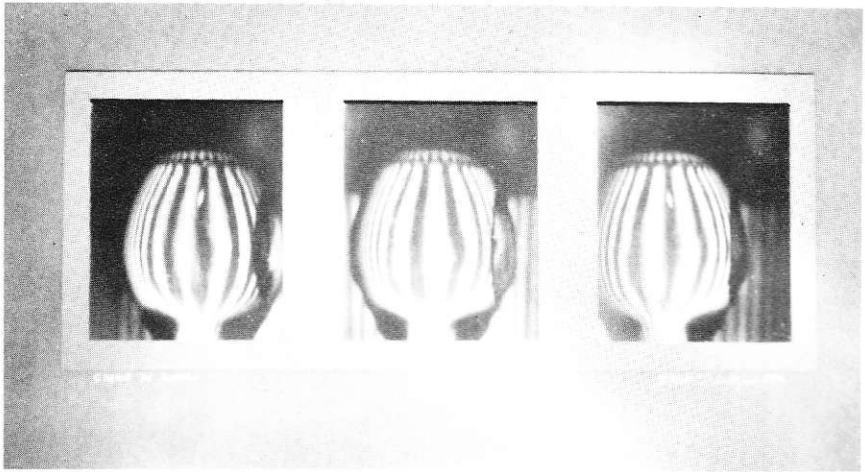
1976

White light reflection/virtual

10" x 18" (3 plates, each 4" x 5") 25.4 cm x 45.72 cm (3 plates, each 10.16 cm x 12.7 cm)

Facility: Brown University

Collection of the artist



BLACK CARBON

Rick Silberman

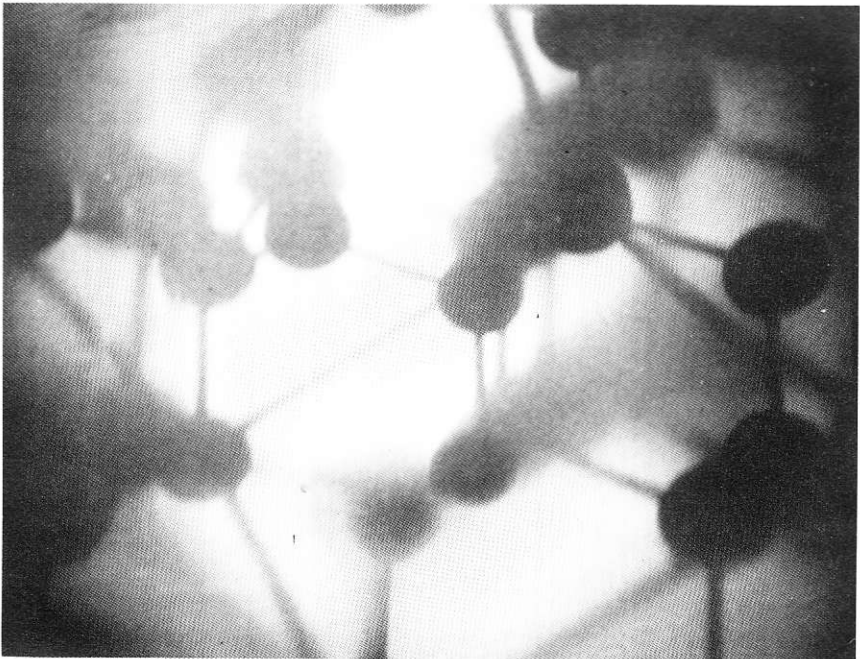
1978

White light reflection/projecting

8" x 10" 20.32 cm x 25.4 cm

Facility: Brown University

Collection of the artist



PORTRAIT OF SHARON

Lloyd G. Cross and Sharon McCormack
1979

360° integral hologram (lifesize)

Facility: filmed at Sterling Technology, Los Angeles; printed at
Oudensha Co. Ltd., Kawasaki, Japan

Collection of the artists



THE WAVE

Amy Greenfield
1978

360° integral hologram

10" x 16" diameter 25.4 cm x 40.64 cm diameter

Facility: Holographic Film Company; produced with grants from the
National Endowment for the Arts and the Cabin Creek Center Artist-in-
Residence Program funded by the New York Council on the Arts
Collection of the artist and Mrs. Benjamin Greenfield



CHANGE

Kazuo Hanano

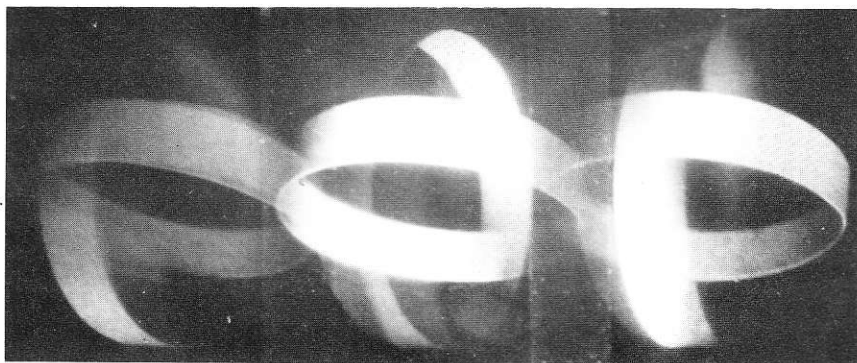
1979

White light transmission

8 $\frac{3}{4}$ " x 11 $\frac{1}{2}$ " 22.23 cm x 29.21 cm

Facility: Holomedia Laboratories

Collection of Holomedia, Inc.



ALICE'S BLUE BIRD

Hiroyuki Kaji and Fujio Iwata (engineer)

1978

Integral hologram in bird-cage frame

9 $\frac{3}{4}$ " x 15 $\frac{3}{4}$ " in cage 27 $\frac{1}{2}$ " x 15 $\frac{3}{4}$ " 25 cm x 40 cm in cage 70 cm x 40 cm

Facility: Toppan Printing Co.

Technical assistance by Tokyo Institute of Technology and Fuji Photo Optical Co.

Collection of Fujio Iwata, Toppan Printing Co., Ltd.



UNTITLED (Rose Prism)

Donald K. Thornton

1979

Multicolor limited parallax white light transmission/orthoscopic and pseudoscopic

8" x 10" 20.32 cm x 25.4 cm

Facility: Brown University

Collection of the artist



UNTITLED

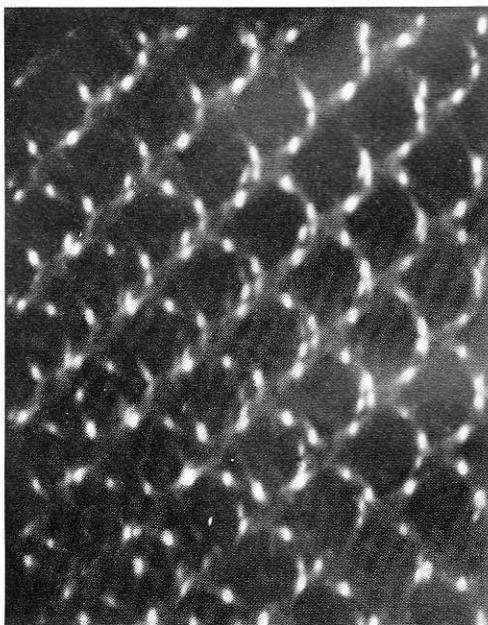
Michael Long

1978

Dichromate

4" x 5" 10.16 cm x 12.7 cm

Collection of the artist



NUÑEZ LAKE

Sam Moree

1979

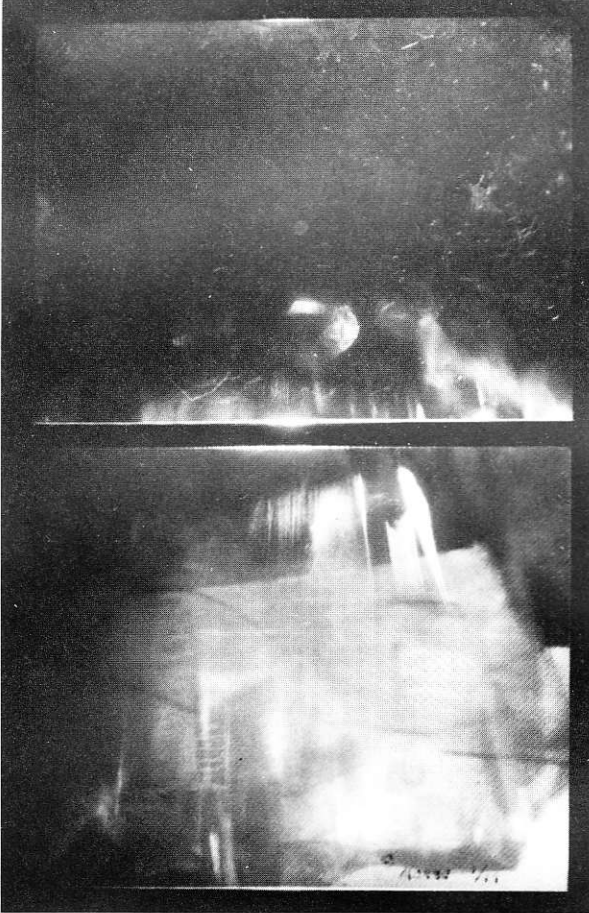
White light transmission/orthoscopic and pseudoscopic

8" x 5" 20.32 cm x 12.7 cm

New York Holographic Laboratories

Collection of the artist

On loan through the generosity of PARS Corporation



SPATIAL FREQUENCIES II

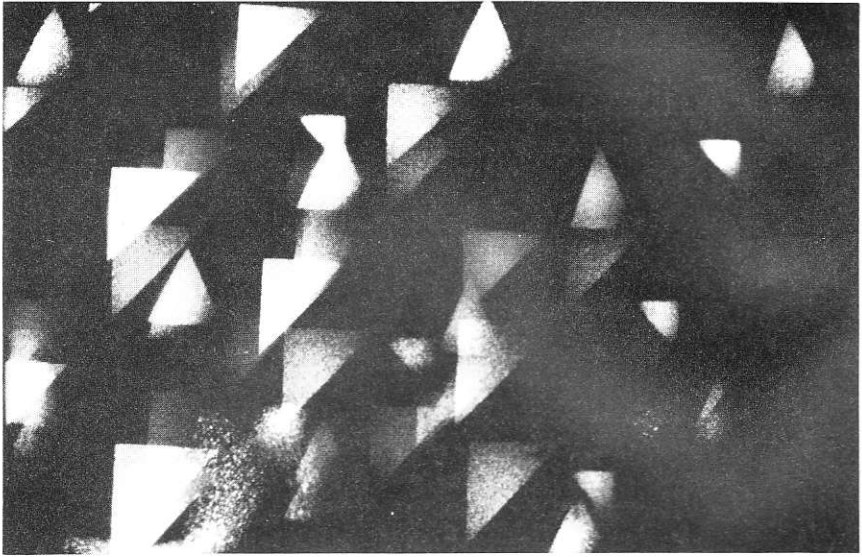
Rudie Berkhout

1979

White light transmission

8" x 10" 20.32 cm x 25.4 cm

Collection of the artist



A WOMAN

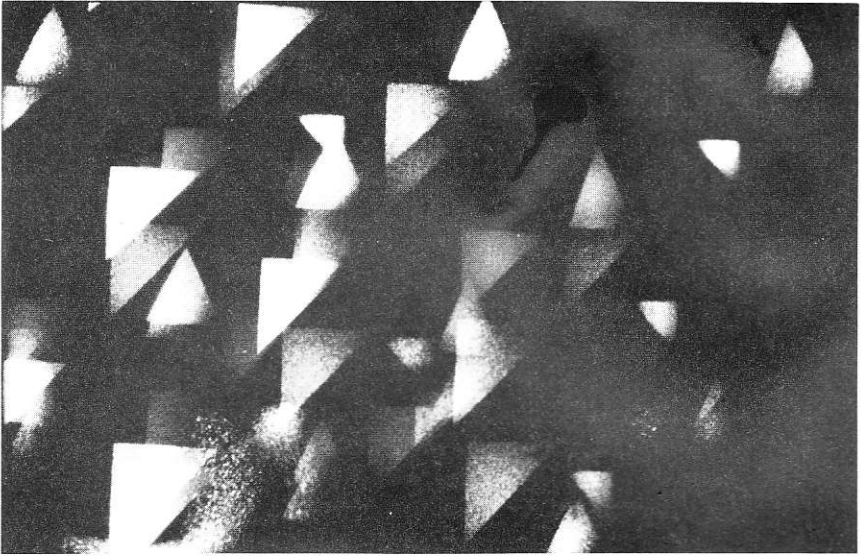
Harriet Casdin-Silver; Camera people **Will Walter, Paul Foley**
1979

Integral

Prototype lens used in process courtesy of Dr. Stephen Benton,
Polaroid Corporation

Collection of the artist





A WOMAN

Harriet Casdin-Silver; Camera people Will Walter, Paul Foley
1979

Integral

Prototype lens used in process courtesy of Dr. Stephen Benton,
Polaroid Corporation

Collection of the artist



WELKIN

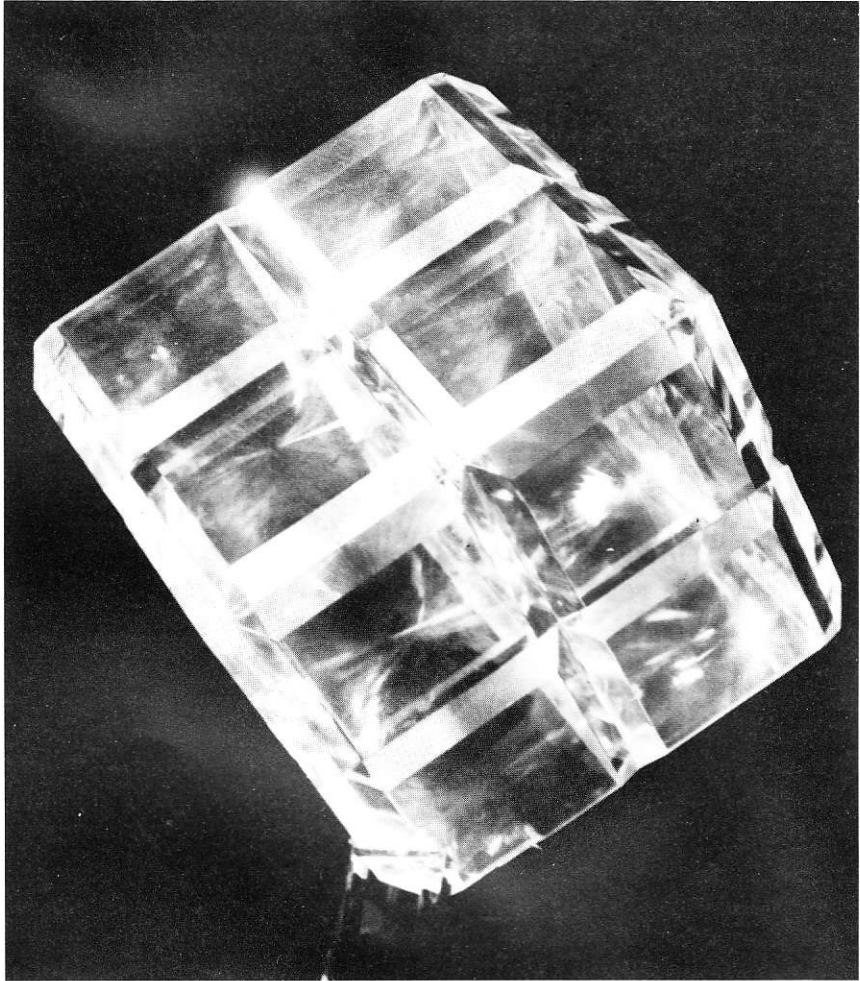
Jerry Bedard

1978

Holographically embossed axicon on plexiglass

(process invented by Michael Foster)

16½" cube; 5½' on pedestal 41.91 cm cube; 167.64 cm on pedestal



SURROGATE

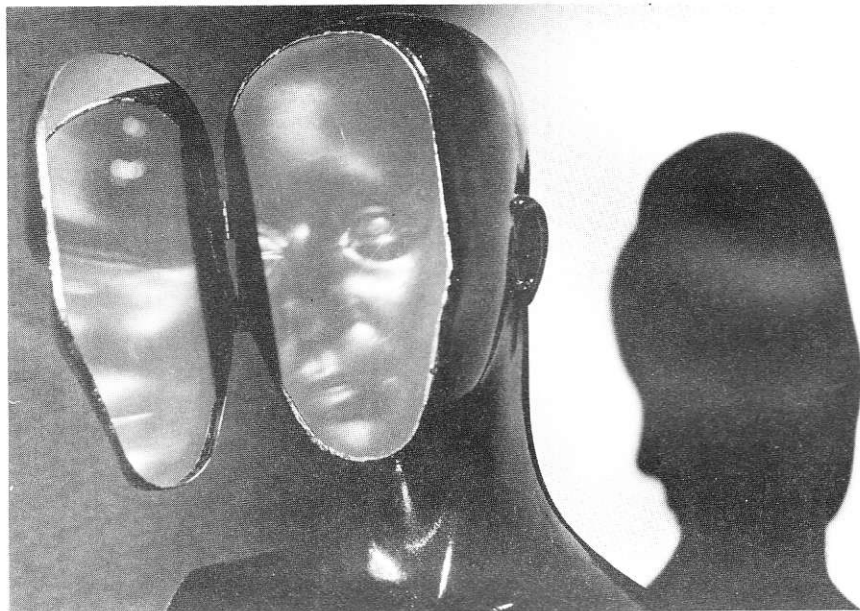
Al Razutis

1976

White light reflection with torso

16" x 16" x 22" 40.64 cm x 40.64 cm x 55.88 cm

Collection of the artist



COSMIC STORM

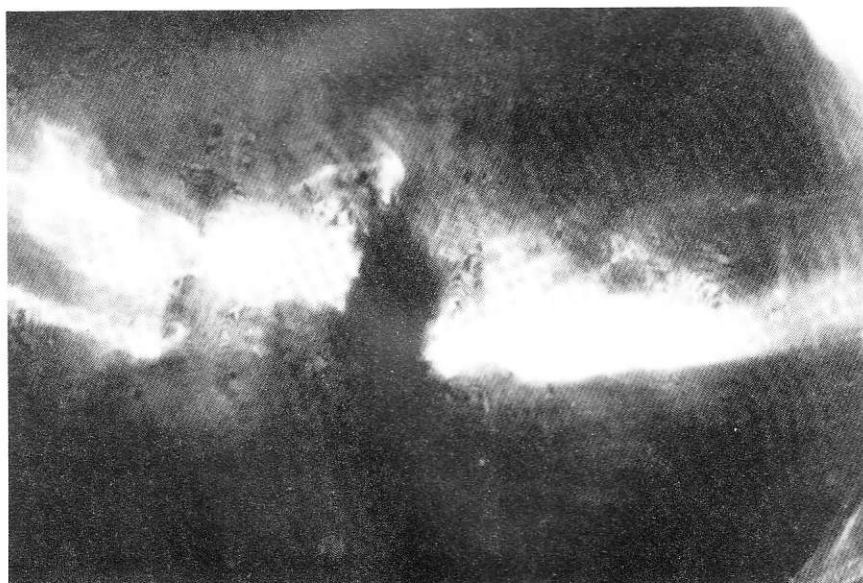
Charles Williams and Steve Michael

1977

White light transmission

5" x 8" 12.7 cm x 20.32 cm

Collection of Three Dimensional Imagery, Ltd.



HOLOGRAM (full figure poses)

Bruce Nauman

1969

Transmission

8" x 10" 20.32 cm x 25.4 cm

Collection of the artist

On loan courtesy of the Leo Castelli Gallery



PHOTONICS #1

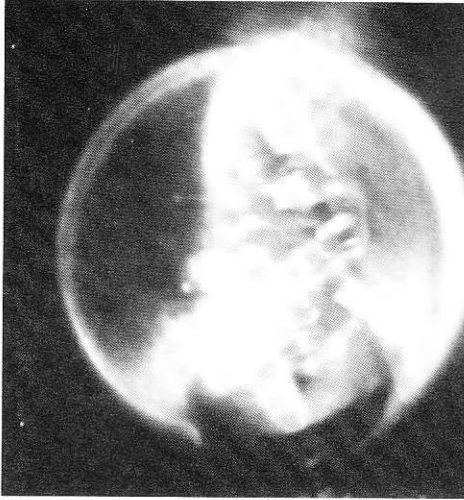
Ruben Nuñez

1977

White light transmission, mirror-backed to view in reflection mode

Collection of the Museum of Holography

On loan from the Museum of Holography through the generosity of J. Randall Plummer

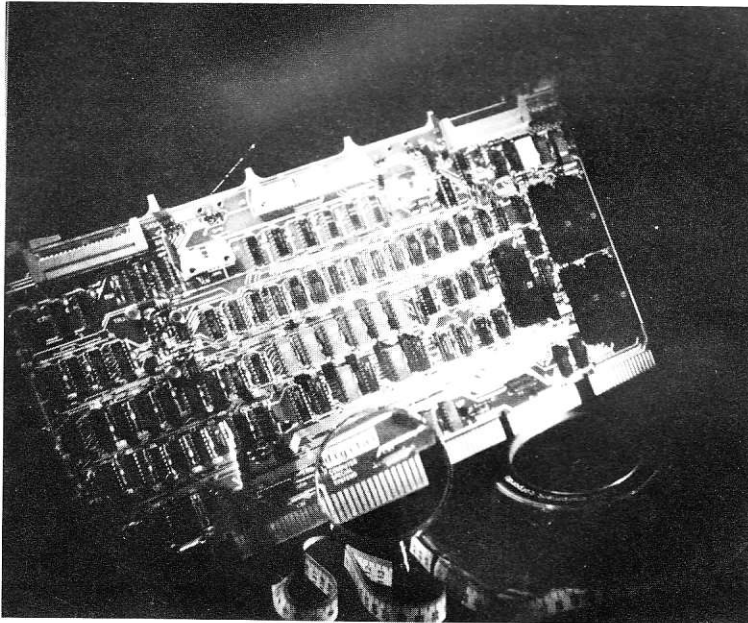


DIGITAL

Nick Phillips
1978

White light reflection/projecting
23" x 17" 58.42 cm x 43.18 cm

Facility: University of Loughborough
Collection of the Museum of Holography
On loan from the Museum of Holography



LION'S HEAD

NIFKI scientists

1976

White light reflection/pseudoscopic

12" x 16" 30.48 cm x 40.64 cm

On loan from the Museum of Fine Arts

Research and Holographic Center, the T. H. Jeong
collection



SPHERE AND COLLAGE

Anait Arutunoff Stephens

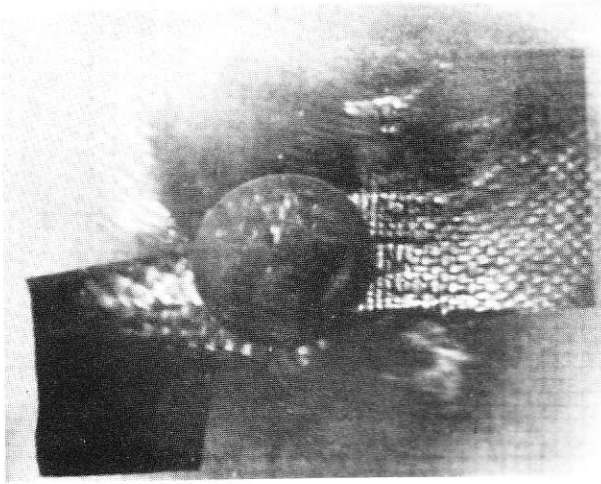
1975

White light reflection/multi-media collage

8" x 10" 20.32 cm x 25.4 cm

Collection of the Museum of Holography

On loan from the Museum of Holography



PHOTON STUDY #10

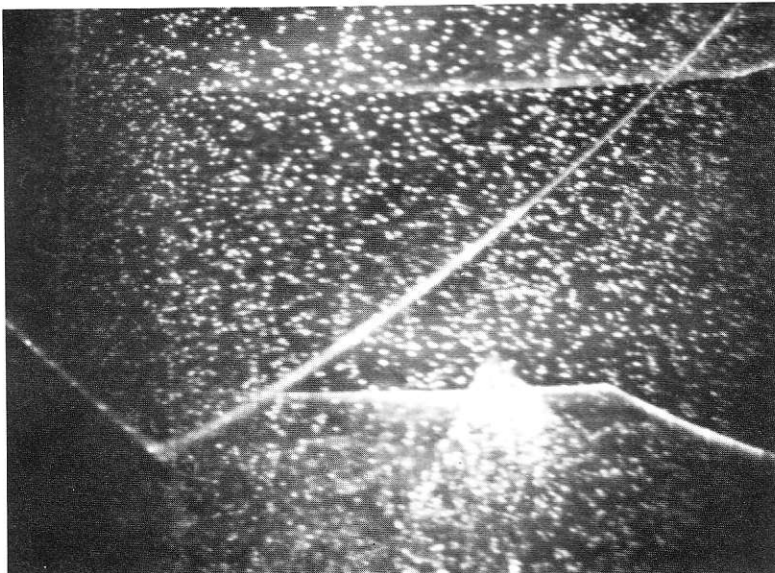
Rudie Berkhout

1978

White light transmission

8" x 10" 20.32 cm x 25.4 cm

Collection of the artist



CRYSTAL BEGINNING

Designed by **Stephen Benton**; produced by **S. A. Benton, H. S. Mingace Jr. and W. Walter**

1977

White light transmission/projected image

12 $\frac{5}{8}$ " x 12 $\frac{5}{8}$ " 32 cm x 32 cm

Produced at Research Laboratories of Polaroid Corporation
Collection of Polaroid Corporation

RIND II (after M. C. Escher)

Designed by **Stephen Benton**; produced by **S. A. Benton, H. S. Mingace Jr. and W. Walter**

1977

White light transmission/projected image

12 $\frac{5}{8}$ " x 12 $\frac{5}{8}$ " 32 cm x 32 cm

Produced at Research Laboratories of Polaroid Corporation
Collection of Polaroid Corporation

OUT OF THE CYLINDER

Lloyd G. Cross and Sharon McCormack

1979

Composite 360° integral hologram (projection)

Facility: Oudensha Co. Ltd., Kawasaki, Japan

Collection of the artists

PLANETOID DIFFRACTION

Jonathan David Klempner

1976

White light reflection/pseudoscopic

4" x 5" 10.16 cm x 12.7 cm

Collection of the artist, Δ Q Studio

SIDEWALK DREAM

Sam Moree

1977-1978

White light transmission/orthoscopic and pseudoscopic

4" x 5" 10.16 cm x 12.7 cm

New York Holographic Laboratories (edition of 20)

Collection of the Museum of Holography

On loan from the Museum of Holography through the generosity of
PARS Corporation

AETHER VANE

Al Razutis

1976

White light reflection

13" x 10" x 16" on plinth 33.02 cm x 25.4 cm x 40.64 cm on plinth

Collection of Jack Hardman, Director, Burnaby Art Gallery

RAINFOREST

Al Razutis

1976

Transmission

14" x 11" x 20" 35.56 cm x 27.94 cm x 50.8 cm

Collection of the artist

LENS IN FRONT

Mac Rugheimer and Larry D. Kirkpatrick

1977

Transmission

7" x 7" 17.78 cm x 17.78 cm

Facility: Department of Physics, Montana State University, Bozeman

On loan from the artists

SHADOWBOX

Dan Schweitzer

1978

White light transmission

6 $\frac{1}{8}$ " x 4 $\frac{1}{2}$ " 15.5 cm x 11.5 cm

New York Holographic Laboratories

Collection of the artist

On loan through the generosity of PARS Corporation

PUM III

Designed by **Will Walter**; produced by **S. A. Benton**, **H. S. Mingace Jr.**
and **W. Walter**

1976

Achromatic white light transmission

9 $\frac{1}{2}$ " x 9 $\frac{1}{2}$ " 24 cm x 24 cm

Produced at Research Laboratories of Polaroid Corporation

Collection of Polaroid Corporation

MOTHER EARTH

Zush

1978

120° integral hologram

Collection of the artist, courtesy of Jason Sapan Holographic Studies
and Sapan Engineering Company

Coherence—light is said to be coherent when it is composed entirely of waves of a single wavelength, which proceed evenly from a single source. Laser beams are both spatially and temporally coherent.

Spatial coherence—light is spatially coherent when the waves are all in phase at a given distance from the light source.

Temporal coherence—light is temporally coherent when the waves are all of the same frequency. Temporally coherent light is monochromatic (that is, of the same color).

Continuous wave (CW) laser—a laser that emits waves in an uninterrupted beam.

Dichromate hologram—a type of (usually reflection) hologram recorded on film made of dichromatic gelatin. Dichromate holograms are very efficient and can be viewed by ordinary daylight; thus they are used for jewelry.

Fringe(s)—pattern(s) of light and dark bands caused by interference of coherent waves of light.

Helium-neon laser—a continuous wave laser which uses excited helium and neon gases to produce coherent light; the laser most commonly used by holographers.

Integral hologram—a holographic “movie,” which creates a sequence of virtual images viewable with an incandescent light bulb.

Interference—the process by which two coherent light waves combine to produce a pattern of fringes.

Constructive interference—when the two waves are in phase, they “add” and produce a light band.

Destructive interference—when the two waves are out of phase, they cancel each other out to produce a dark band.

Laser—acronym for Light Amplification by Stimulated Emission of Radiation; a laser produces light that is both temporally and spatially coherent—a very regular beam of a single color.

Mercury arc lamp—a lamp that produces light by exciting mercury atoms; with a color filter, an alternative to a laser for illuminating transmission holograms.

Object beam—during the holographic process, the laser beam is split. The object beam is the portion that illuminates the object being holographed. The beam is changed by the object before it interferes with the reference beam in the holographic film or plate.

Orthoscopic image—the reconstructed image that maintains the same spatial relations between objects that they had when they were holographed; an orthoscopic image is usually located behind the hologram.

Parallax—the observed shift in position noticed between a close object and a distant object as the observer changes his/her viewpoint.

Phase—light waves are in phase when they have their crests together.
Antiphase—light waves are in antiphase when the crest of one coincides with the trough of the other.

Phase hologram—a hologram that refracts light by means of varying the index of refraction of a transparent substance. Also known as a bleached hologram.

Pseudoscopic image—a reconstructed image that reverses the spatial relations objects had when they were holographed; usually the pseudoscopic image appears in front of the plane of the hologram.

Pulsed-ruby laser—a laser that emits light intermittently; often used when holographing a living or other moving subject because of its short burst of high energy coherent light.

Real image—an image projected on a screen or other surface.

Reference beam—during the holographic process, the laser beam is split. The reference beam is the part that is aimed directly at the film without being affected or changed by the object being holographed.

Reflection hologram—a hologram in which the object beam and reference beam interfere from opposite sides of the holographic film or plate. Reflection holograms are viewed by reflecting a (usually white) light source toward the viewer from the hologram.

Transmission hologram—a type of hologram in which the object beam and reference beam interfere from the same side of the holographic film or plate. Transmission holograms are viewed by light (frequently coherent, although white light is sometimes used) transmitted through the hologram toward the viewer.

Virtual image—an image that is directly viewable by the eye without a screen or other projection surface.

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