30 JULY – 3 AUGUST *Los Angeles*
SIGGRAPH2017

THE INTERACTIVE IMAGE: A MEDIA ARCHAEOLOGY APPROACH

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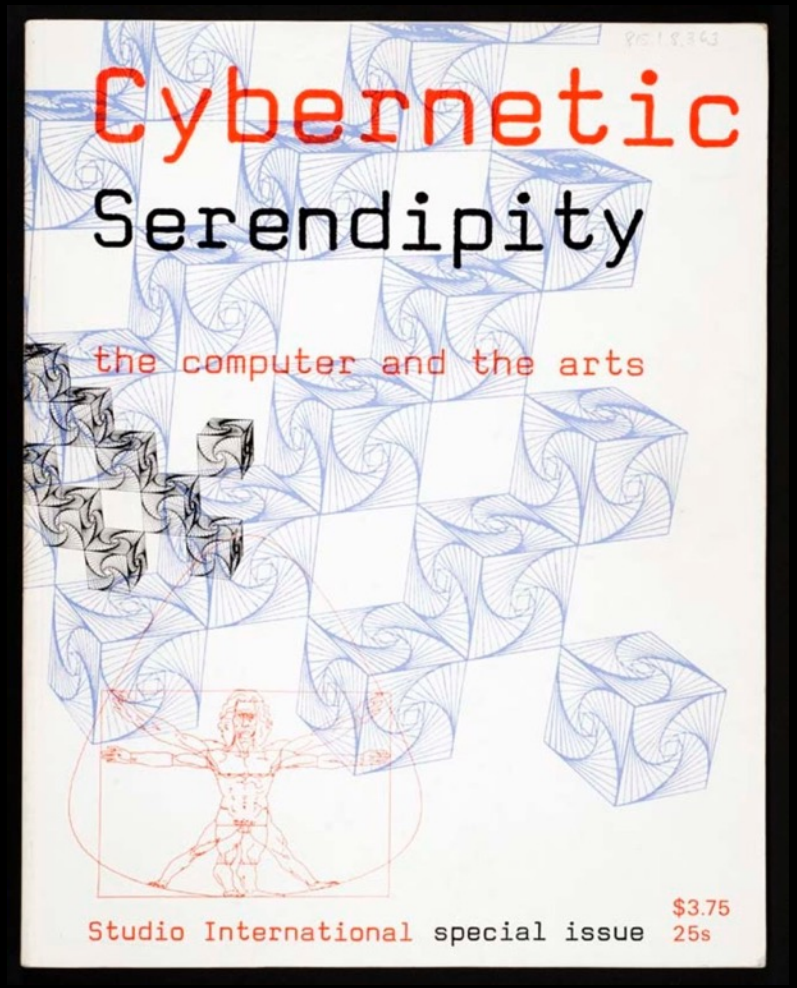
Electronic Visualization Laboratory (EVL)

Interactive Image Brochure (fragment), 7” x 10”. Color Photograph on paper. © EVL, 1987


THE
INTERACTIVE
IMAGE
©1988 Electronic Visualization Laboratory, University of Illinois at Chicago

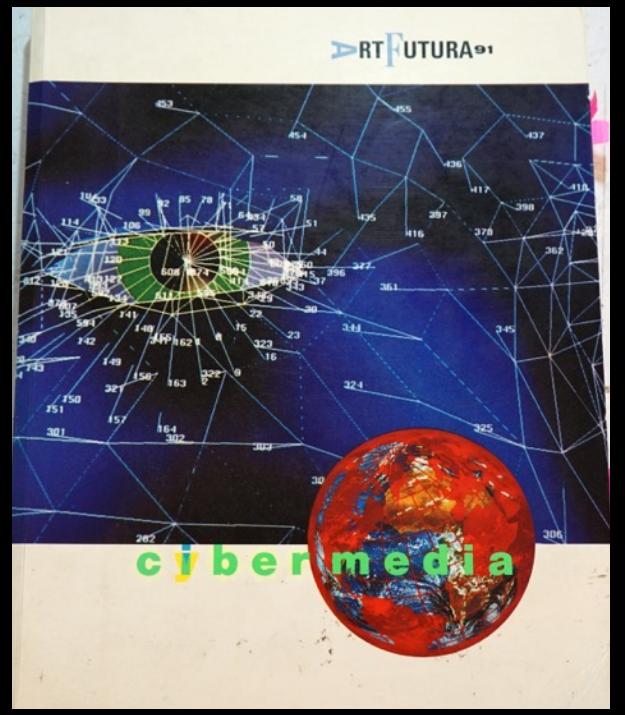
Public Displays of Interactive Art



ARS ELECTRONICA

ACMSIGGRAPH

ISEA
INTERNATIONAL



Art Futura 1991, Art Catalog

1968 → 1980s →

Media Archaeology Approach

Topoi and Deep Time (Andrés)

The Collection

Some of the EVL archives at the former CAVE™ environment - March 2016

Access to the collection

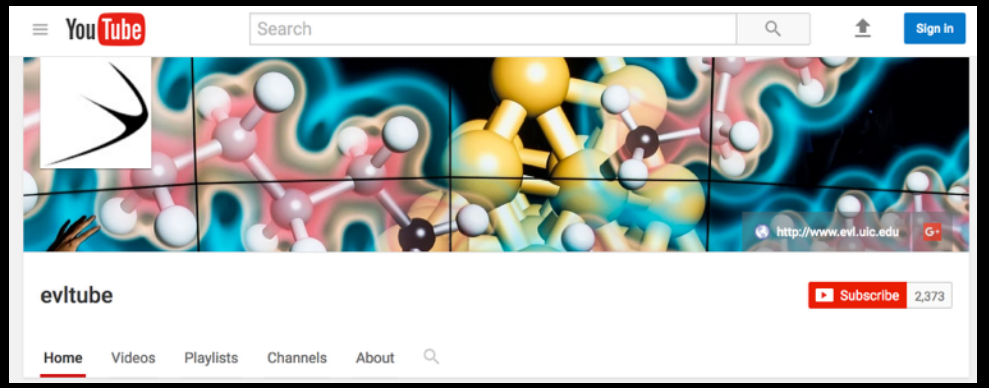
Image of Maxine Brown in ©1987 by Harriet Lurie's IP software "Quark"

electronic visualization laboratory

Maxine Brown (Director)

Dana Plepys (Associate Director)

Angus Forbes (Faculty)



youtube.com/evltube compiled by Dana Plepys

The Interactive Image memorabilia, 1986–1990. © EVL

- manuscripts
- sketches
- press clippings
- correspondence
- personal communications
- art catalogs
- videos
- photographs
- photocopies
- brochures

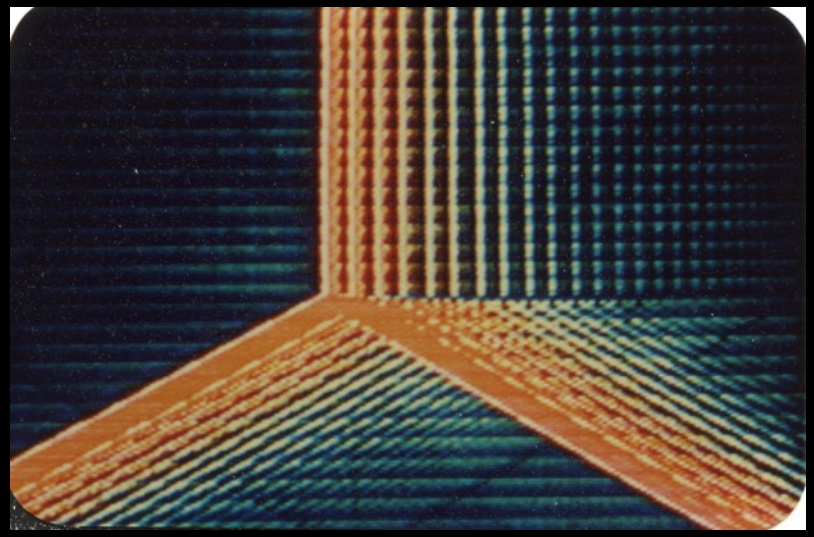
Discovering the History of EVL

Dan Sandin

Sandin in “5 Minute Romp thru the IP”
1973 ©EVL (from EVLtube)

Sandin Image Processor from 1971 during EVL visit in 2016

Spiral PTL Dan Sandin and Tom DeFanti
Interactive Image Brochure (fragment), 7” x 10”.
Color Photograph on paper. © EVL, 1987



Colorful Colorado by Phil Morton, 1974 ©EVL (from EVLtube)

Tom DeFanti

Creates GRASS language PhD at OSU under Csuri

Circle Graphics Habitat - 1973

Electronic Visualization Events (EVEs) 1970s

ZGRASS, Bally Arcade…

```
GETDSK BFLY1          (get butterfly from disk)
COPY BFLY1,BFLY2      (make a copy)
ROTATE/D BFLY1,X,D1   (rotate on x axis)
ROTATE/Y BFLY1,D2     (then compound with
                        y rotation)
SETINT BFLY1,D3       (control intensity on
                        dial 3)
ROTATE/D BFLY2,D5     (rotate on y axis)
ROTATE/X BFLY2,D6     (then compound with
                        x rotation)
SETINT BFLY2,D7       (control intensity on
                        dial 7)
GETDSK 3DAXES         (get the axes up)
GROUP 3DAXES,         (group and call the
  BFLY1,SAM             group "SAM" BFLY2
                        gets in for free)
ROTATE/D SAM,X,S1,S2  (rotate the whole thing)
```

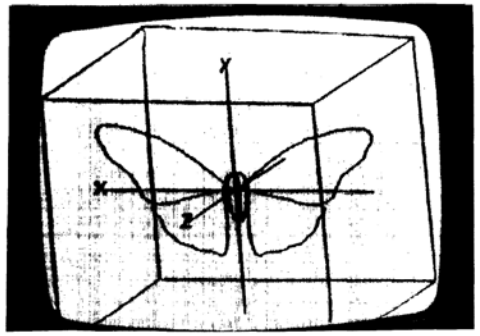
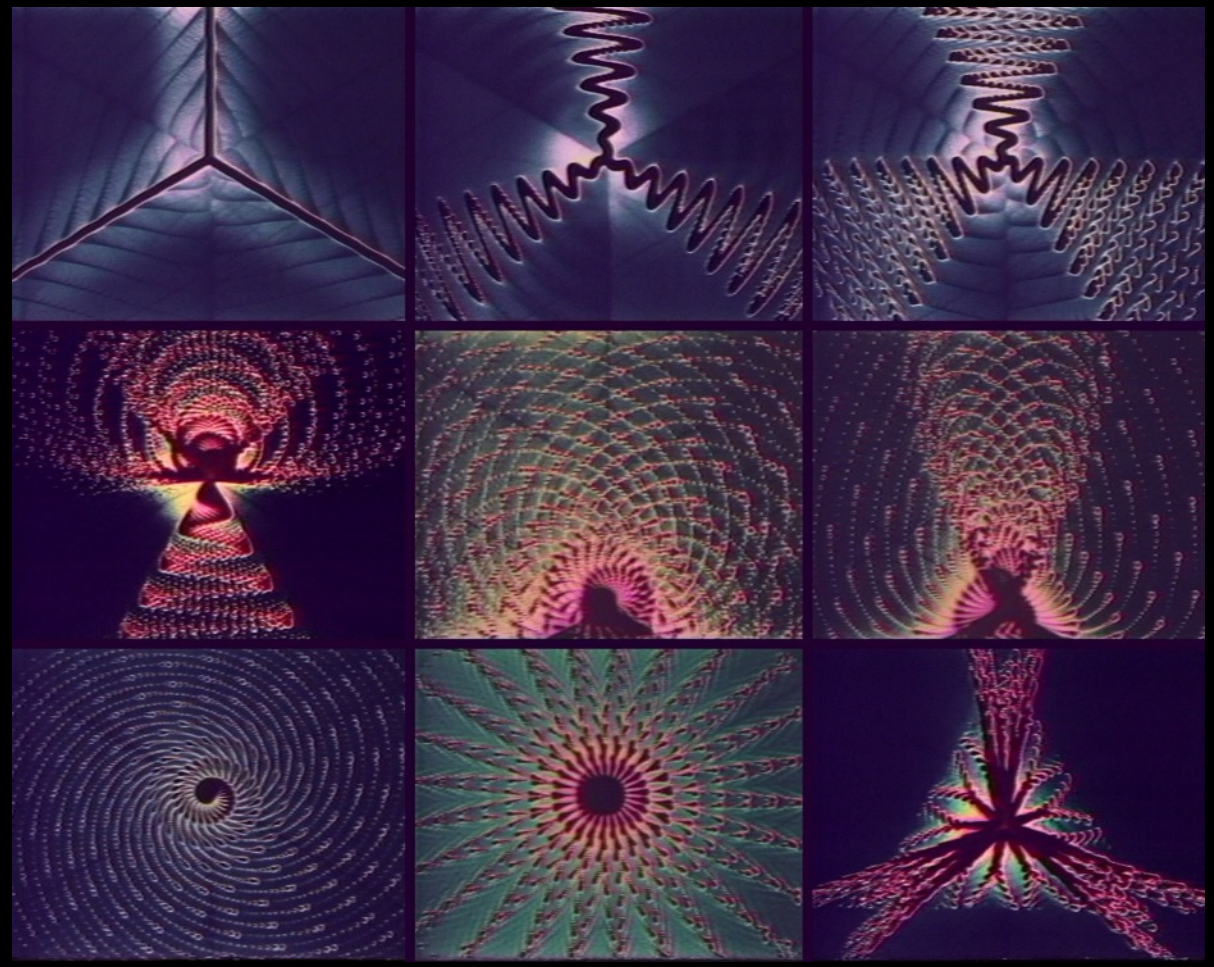


Figure 4—The butterfly in its original position

"The digital component of the circle graphics habitat"
by Tom DeFanti, 1976. Accessed through ACM Digital Library



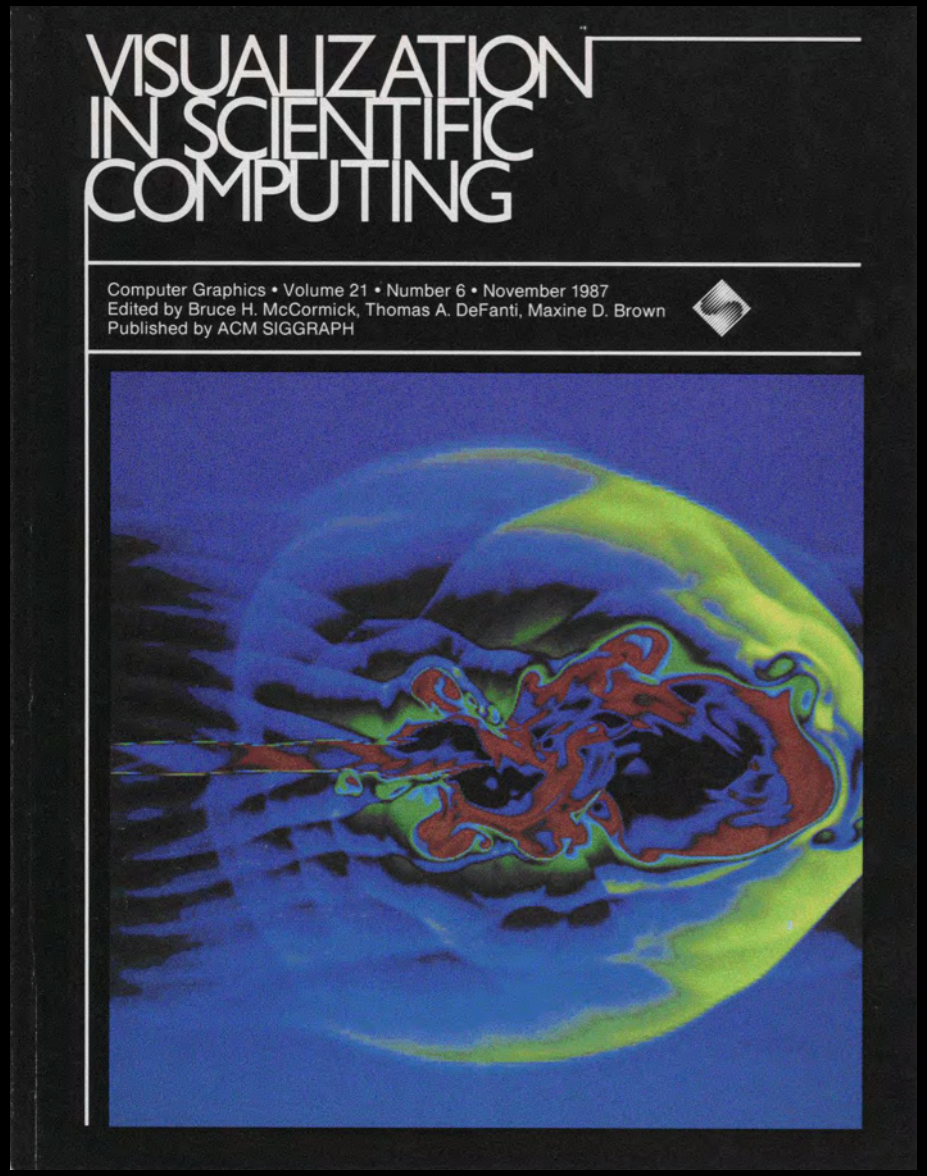
Spiral 5 PTL Dan Sandin, Tom DeFanti, and Mimi Shevitz

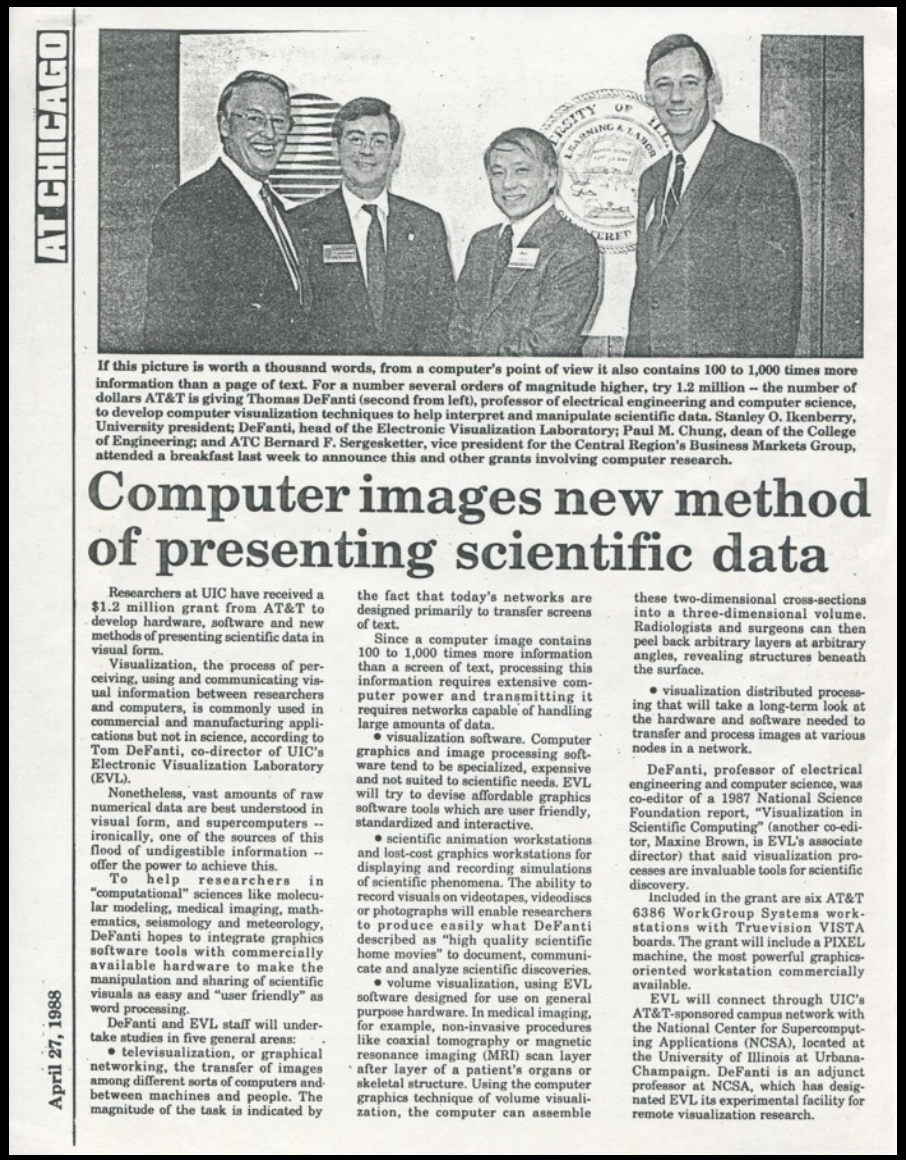
CAVE™

ZGRASS

Joint MFA, BS in EVL

SVR





AT CHICAGO

April 27, 1988

If this picture is worth a thousand words, from a computer's point of view it also contains 100 to 1,000 times more information than a page of text. For a number several orders of magnitude higher, try 1.2 million -- the number of dollars AT&T is giving Thomas DeFanti (second from left), professor of electrical engineering and computer science, to develop computer visualization techniques to help interpret and manipulate scientific data. Stanley O. Ikenberry, University president; DeFanti, head of the Electronic Visualization Laboratory; Paul M. Chung, dean of the College of Engineering; and ATC Bernard F. Sergesketter, vice president for the Central Region's Business Markets Group, attended a breakfast last week to announce this and other grants involving computer research.

Computer images new method of presenting scientific data

Researchers at UIC have received a $1.2 million grant from AT&T to develop hardware, software and new methods of presenting scientific data in visual form.

Visualization, the process of perceiving, using and communicating visual information between researchers and computers, is commonly used in commercial and manufacturing applications but not in science, according to Tom DeFanti, co-director of UIC's Electronic Visualization Laboratory (EVL).

Nonetheless, vast amounts of raw numerical data are best understood in visual form, and supercomputers -- ironically, one of the sources of this flood of undigestible information -- offer the power to achieve this.

To help researchers in "computational" sciences like molecular modeling, medical imaging, mathematics, seismology and meteorology, DeFanti hopes to integrate graphics software tools with commercially available hardware to make the manipulation and sharing of scientific visuals as easy and "user friendly" as word processing.

DeFanti and EVL staff will undertake studies in five general areas:

- televisualization, or graphical networking, the transfer of images among different sorts of computers and between machines and people. The magnitude of the task is indicated by the fact that today's networks are designed primarily to transfer screens of text.

Since a computer image contains 100 to 1,000 times more information than a screen of text, processing this information requires extensive computer power and transmitting it requires networks capable of handling large amounts of data.

- visualization software. Computer graphics and image processing software tend to be specialized, expensive and not suited to scientific needs. EVL will try to devise affordable graphics software tools which are user friendly, standardized and interactive.
- scientific animation workstations and lost-cost graphics workstations for displaying and recording simulations of scientific phenomena. The ability to record visuals on videotapes, videodiscs or photographs will enable researchers to produce easily what DeFanti described as "high quality scientific home movies" to document, communicate and analyze scientific discoveries.
- volume visualization, using EVL software designed for use on general purpose hardware. In medical imaging, for example, non-invasive procedures like coaxial tomography or magnetic resonance imaging (MRI) scan layer after layer of a patient's organs or skeletal structure. Using the computer graphics technique of volume visualization, the computer can assemble these two-dimensional cross-sections into a three-dimensional volume. Radiologists and surgeons can then peel back arbitrary layers at arbitrary angles, revealing structures beneath the surface.
- visualization distributed processing that will take a long-term look at the hardware and software needed to transfer and process images at various nodes in a network.

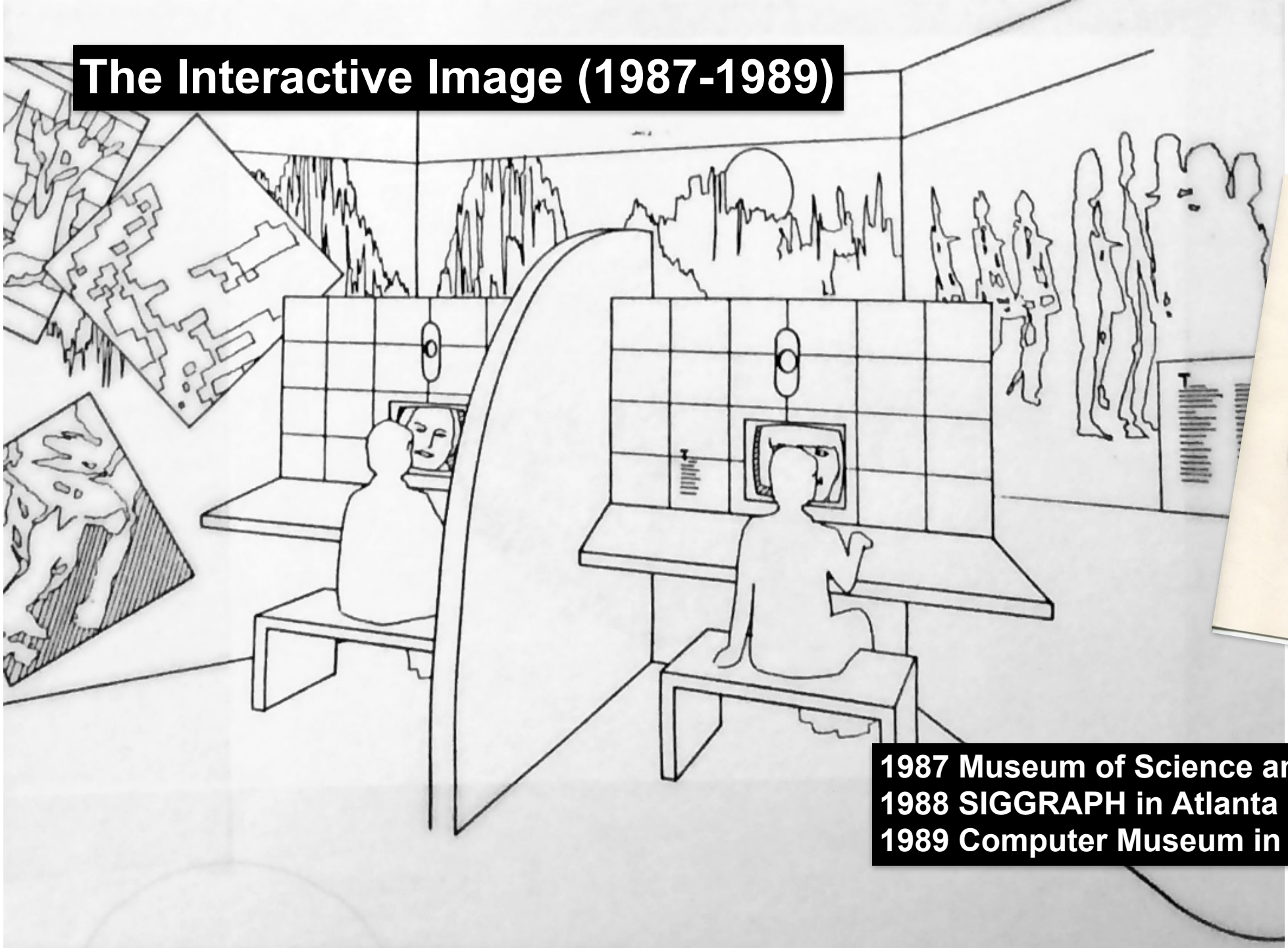
DeFanti, professor of electrical engineering and computer science, was co-editor of a 1987 National Science Foundation report, "Visualization in Scientific Computing" (another co-editor, Maxine Brown, is EVL's associate director) that said visualization processes are invaluable tools for scientific discovery.

Included in the grant are six AT&T 6386 WorkGroup Systems workstations with Truevision VISTA boards. The grant will include a PIXEL machine, the most powerful graphics-oriented workstation commercially available.

EVL will connect through UIC's AT&T-sponsored campus network with the National Center for Supercomputing Applications (NCSA), located at the University of Illinois at Urbana-Champaign. DeFanti is an adjunct professor at NCSA, which has designated EVL its experimental facility for remote visualization research.

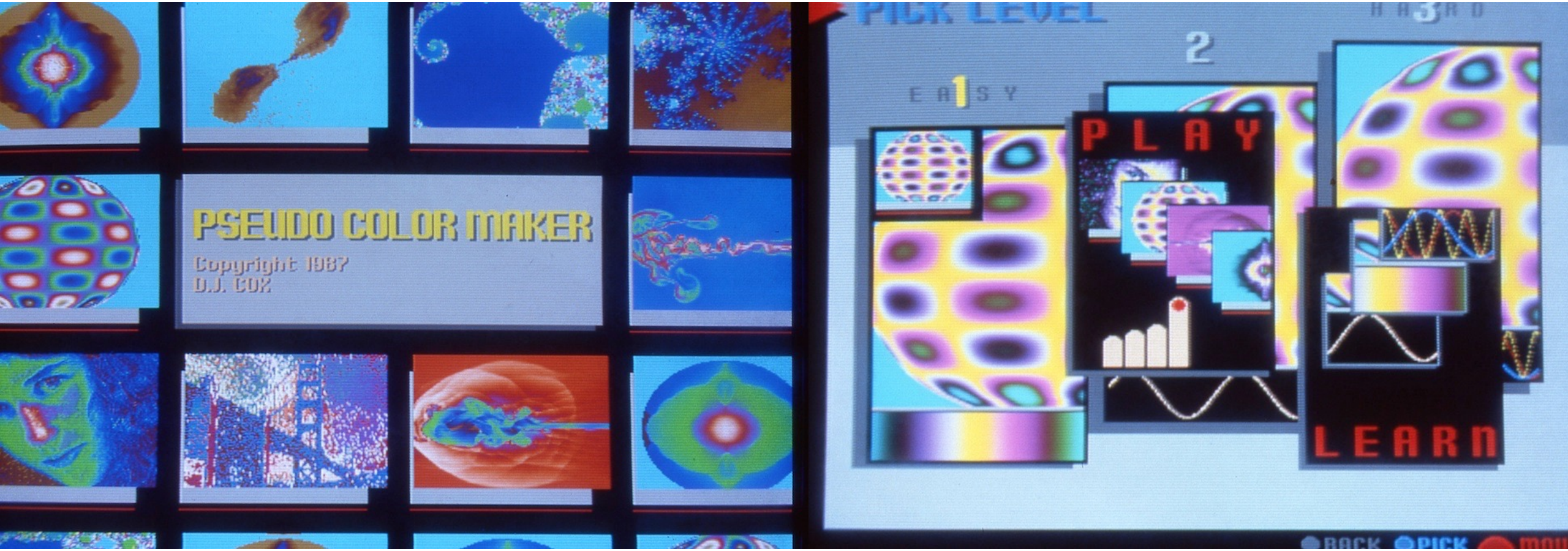
ViSC

The Interactive Image (1987-1989)



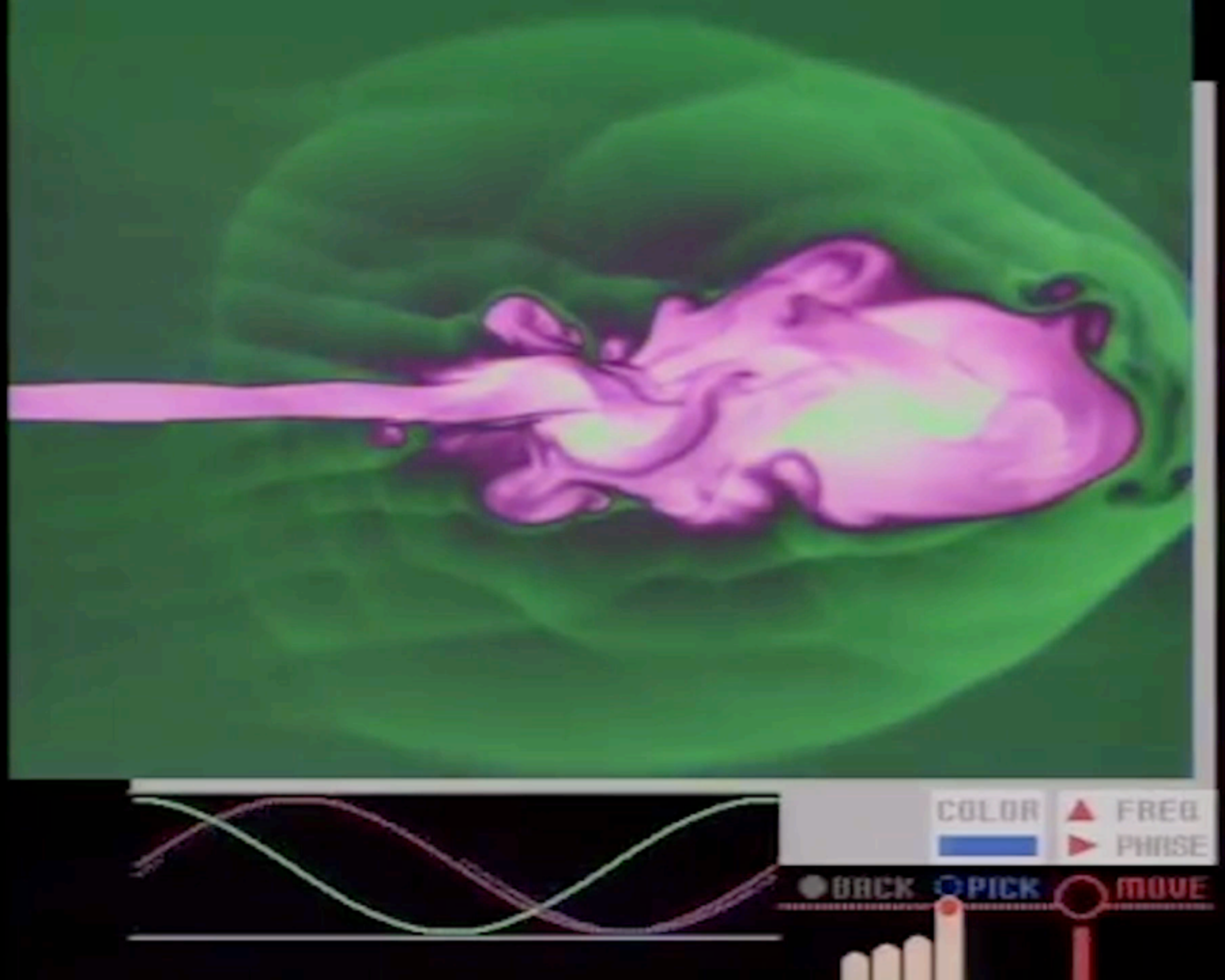
1987 Museum of Science and Industry in Chicago
1988 SIGGRAPH in Atlanta
1989 Computer Museum in Boston

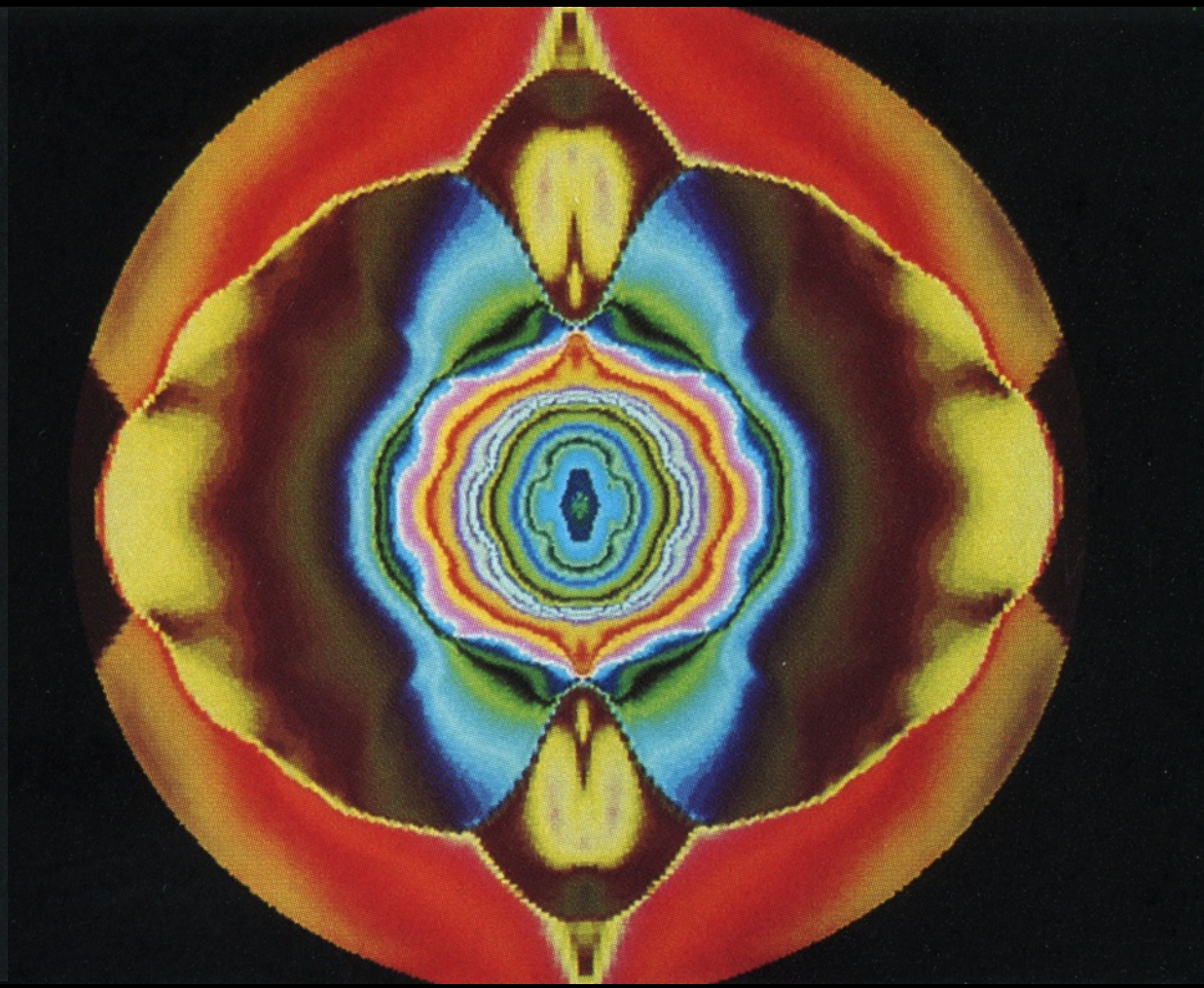
Artworks



Pseudo Color Maker, © Dona Cox, 1987

Astrophysical Jetstreams (fragment), 1987, 8 ½” x 11,” color print on paper. © Donna Cox and Michael Norman

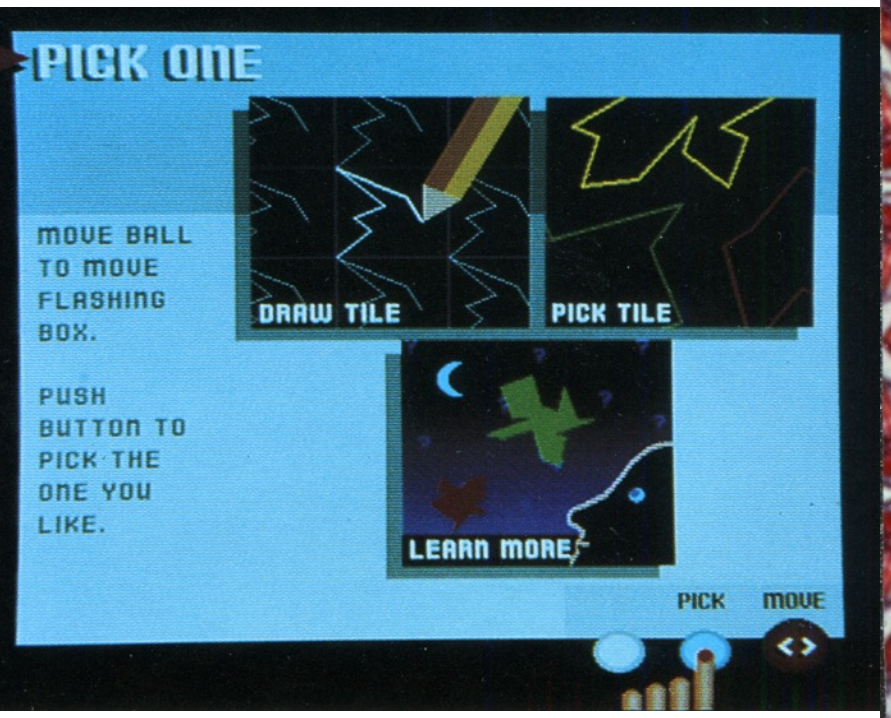

COLOR
FREQ
PHASE
BACK
PICK
MOVE



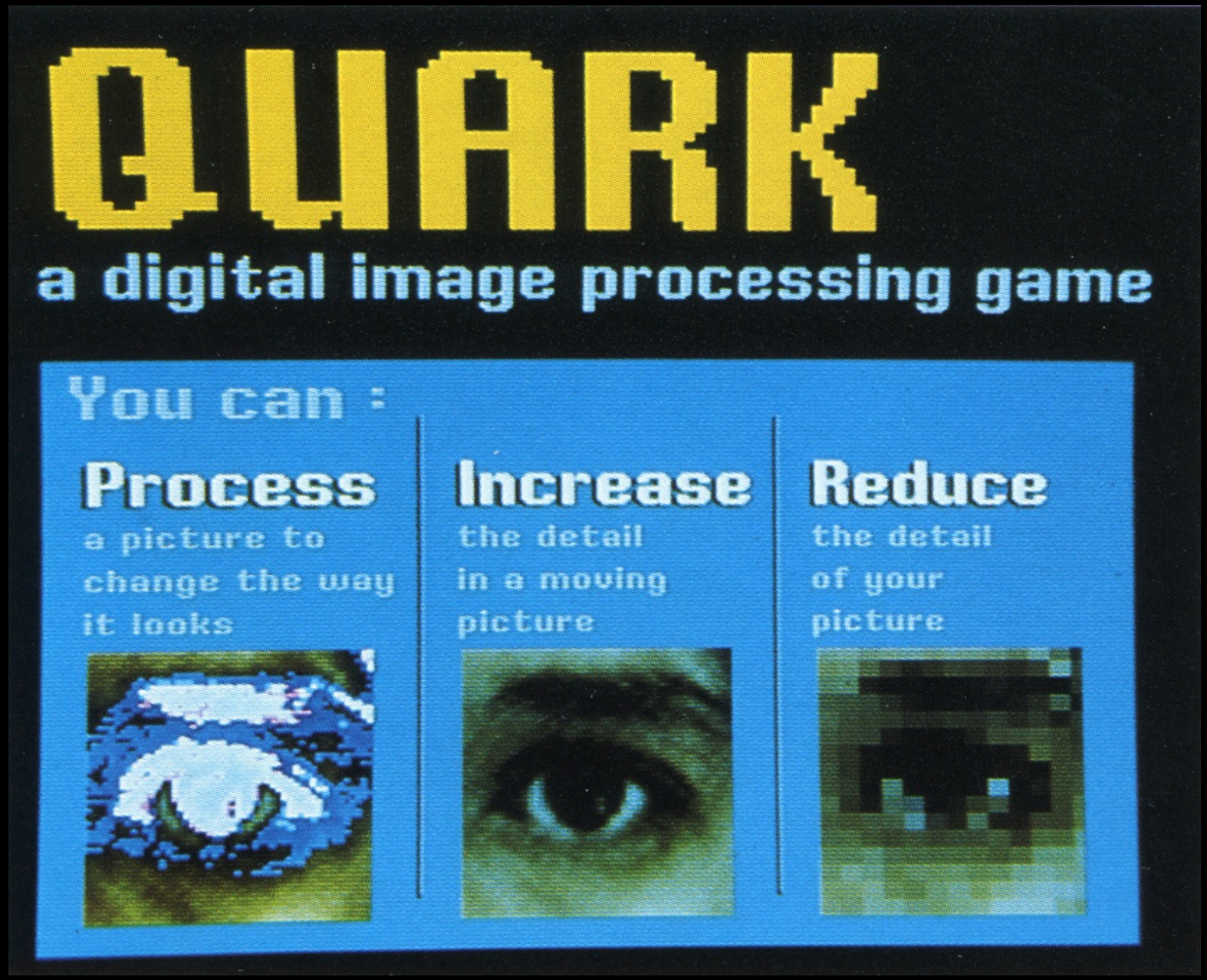
Renaissance Teams and Scientific Visualization: A convergence of Art and Science [Brochure] 8 ½” x 11,” color print on paper.

Compulage (Computer Collage) ©1987, Donna Cox

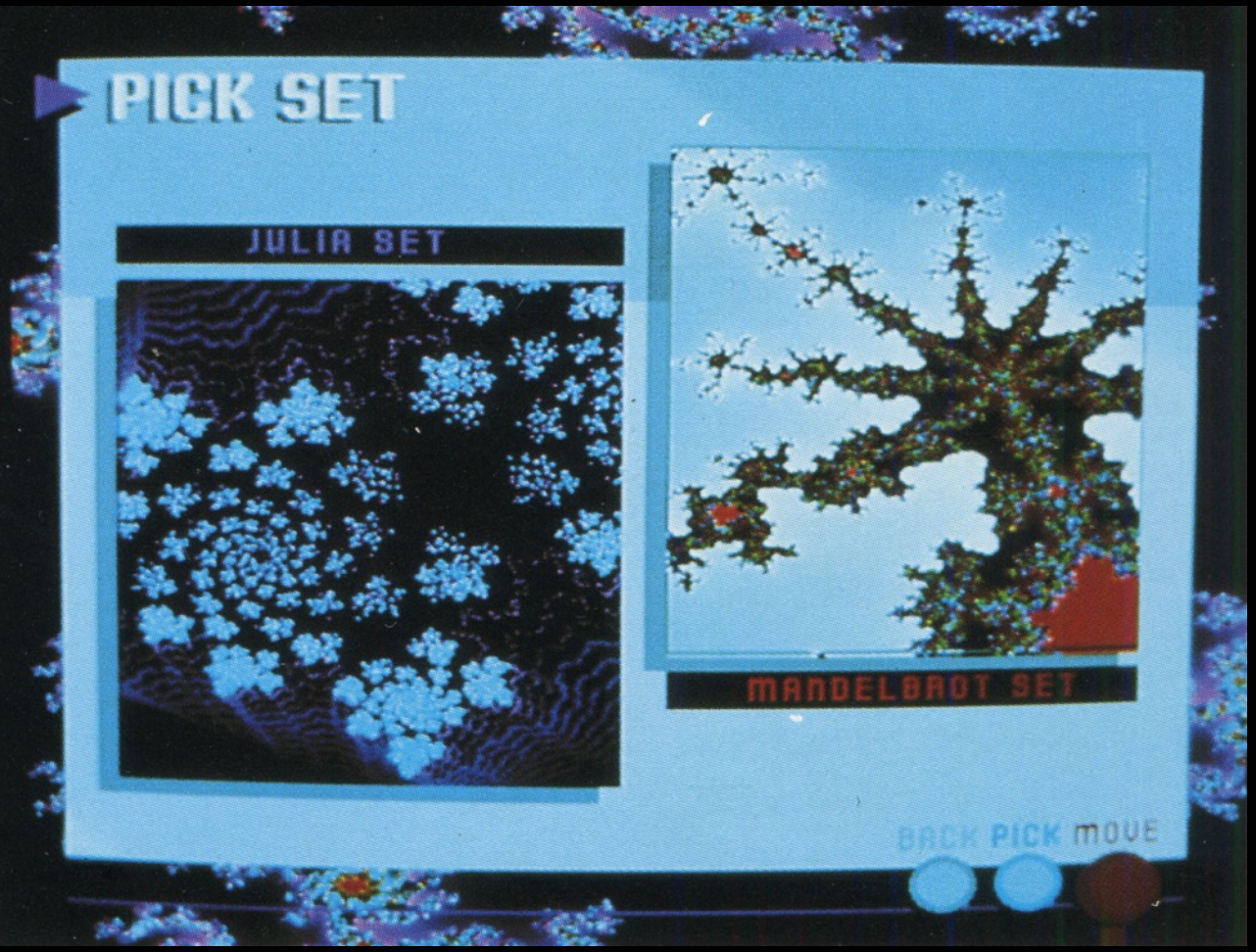
Neutron Star Collision (Computer Collage) ©1987, Donna Cox and Charles Ross Evans

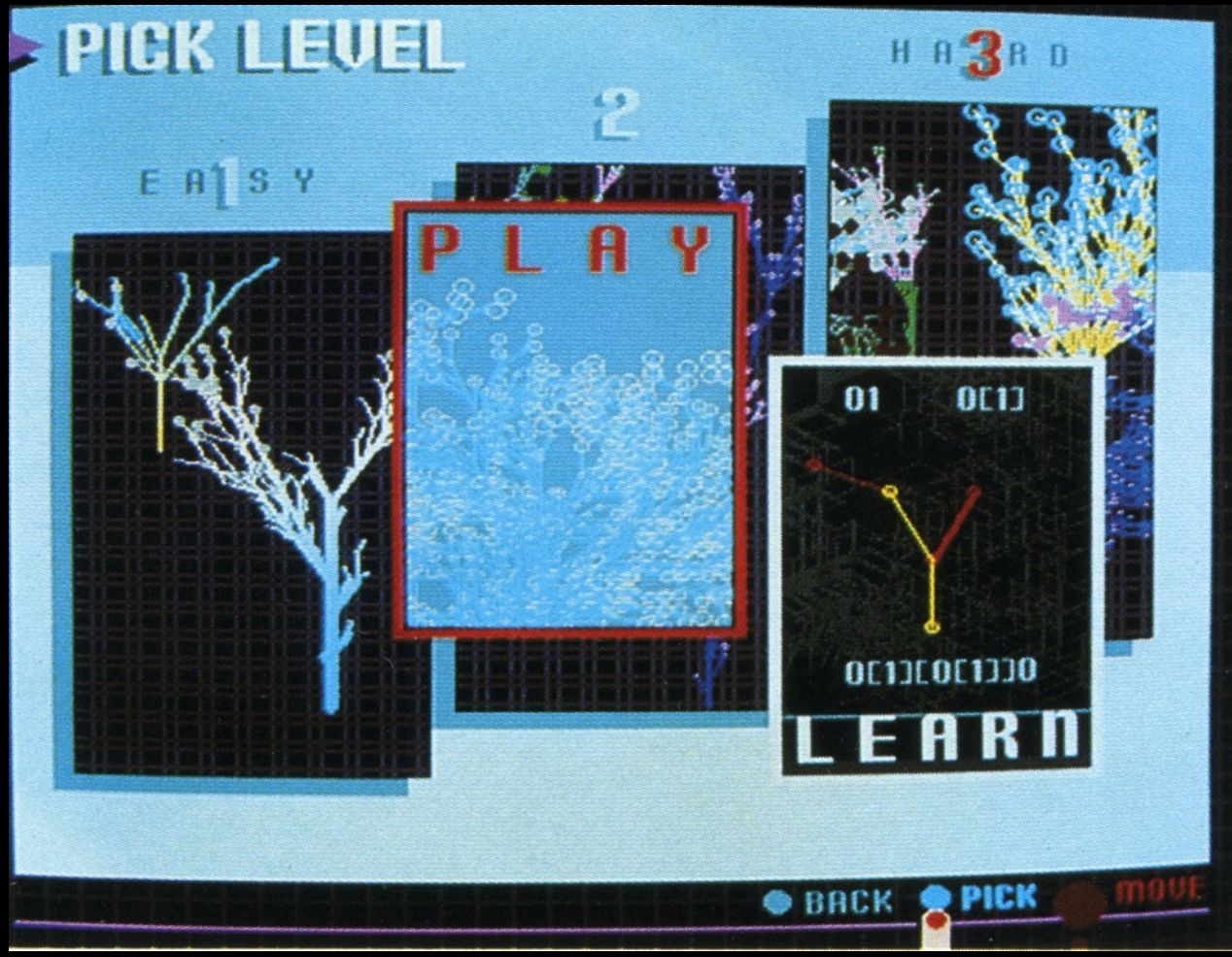


ERIC: Escher-like Reflective Interactive Computer, 1987, Work by Debra Weisblum Hershmann. © EVL

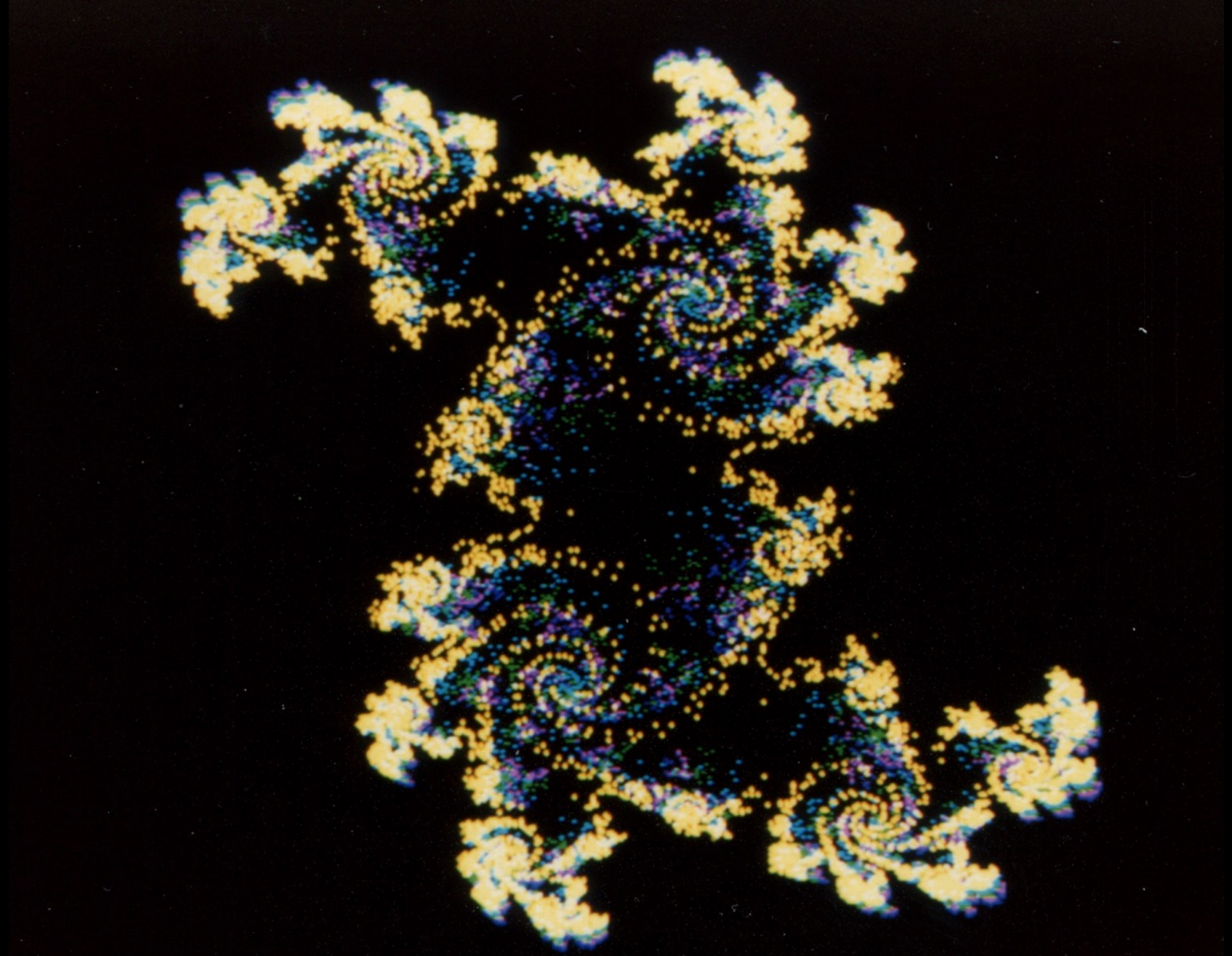


QUARK, 1987, Work by Harriet Lurie. © EVL

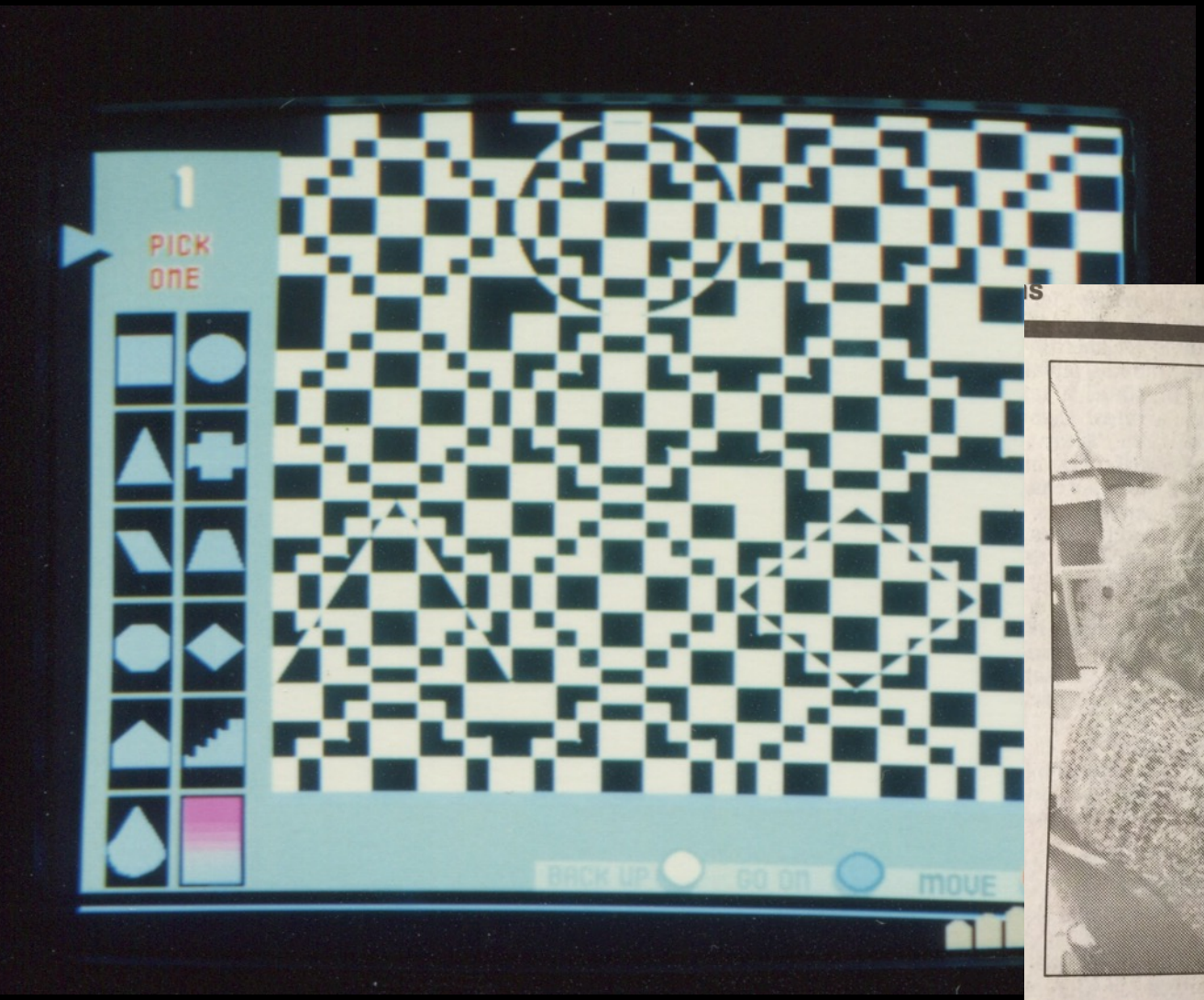


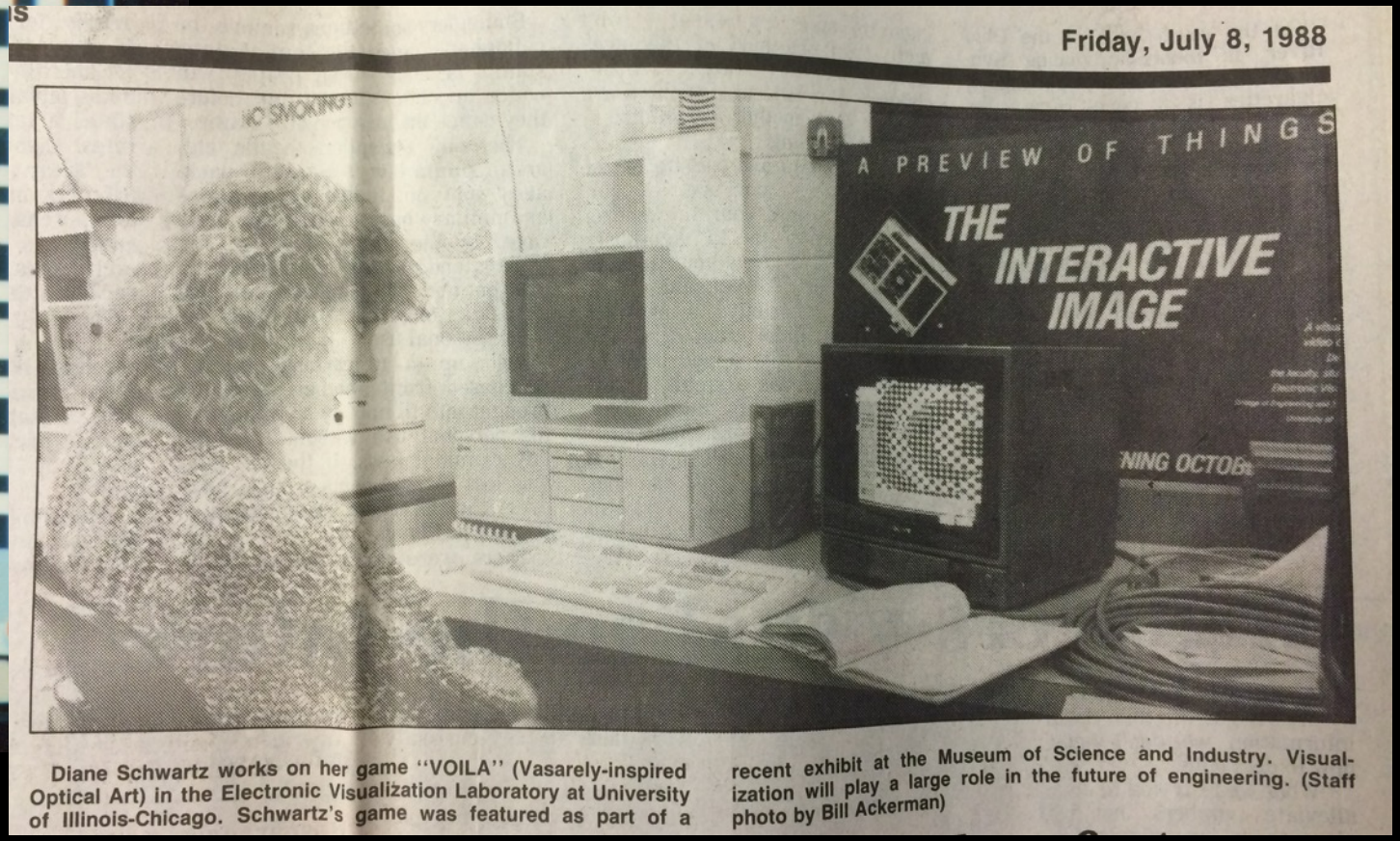


Graftals and Fractals, 1987 Graftals by Sumit Das and Seton Coggeshall, and *Fractals* by Dan Sandin © EVL



Fractals, 1987, 5”x 3.5”, photograph, by Dan Sandin, © EVL





Friday, July 8, 1988

NO SMOKING!

A PREVIEW OF THINGS

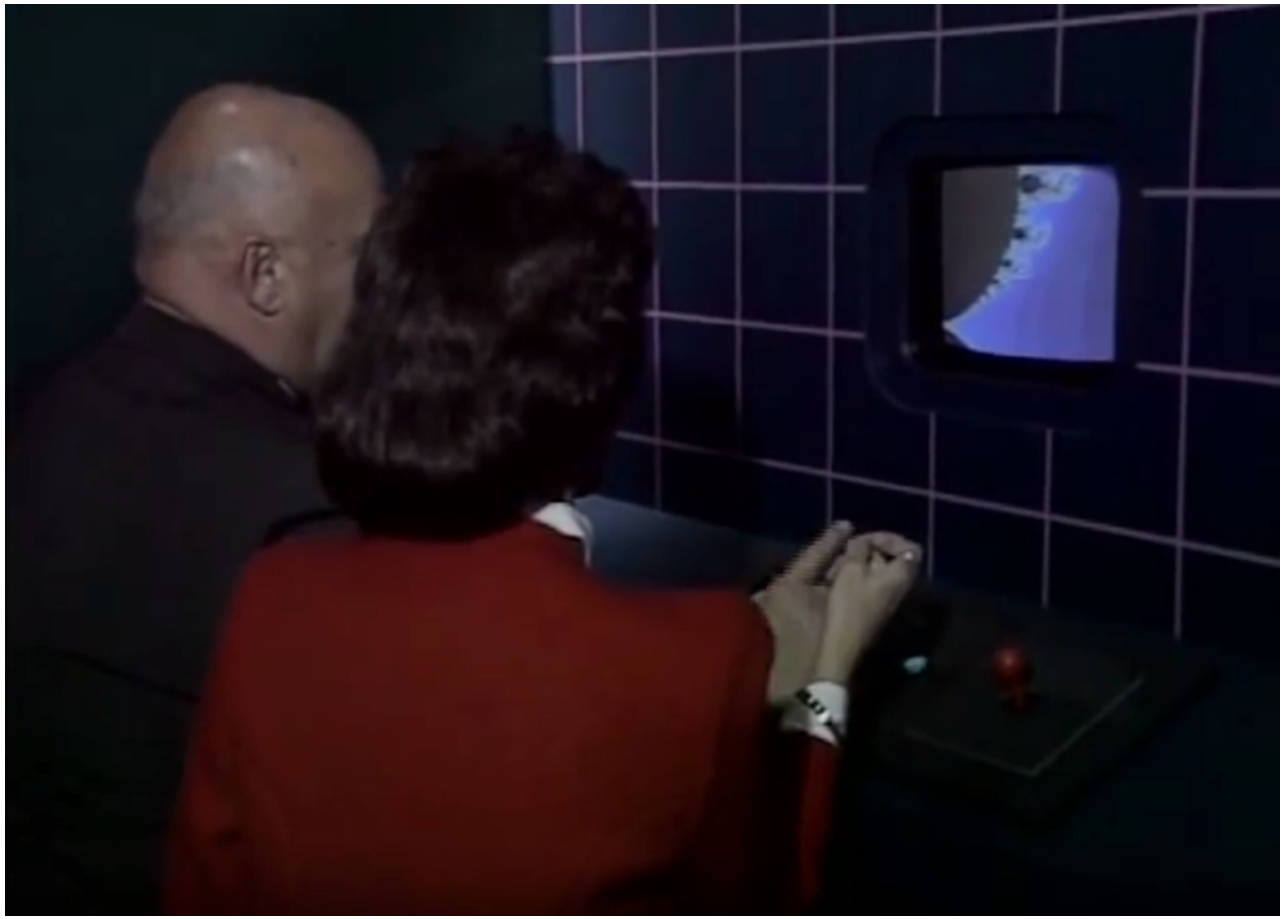
THE INTERACTIVE IMAGE

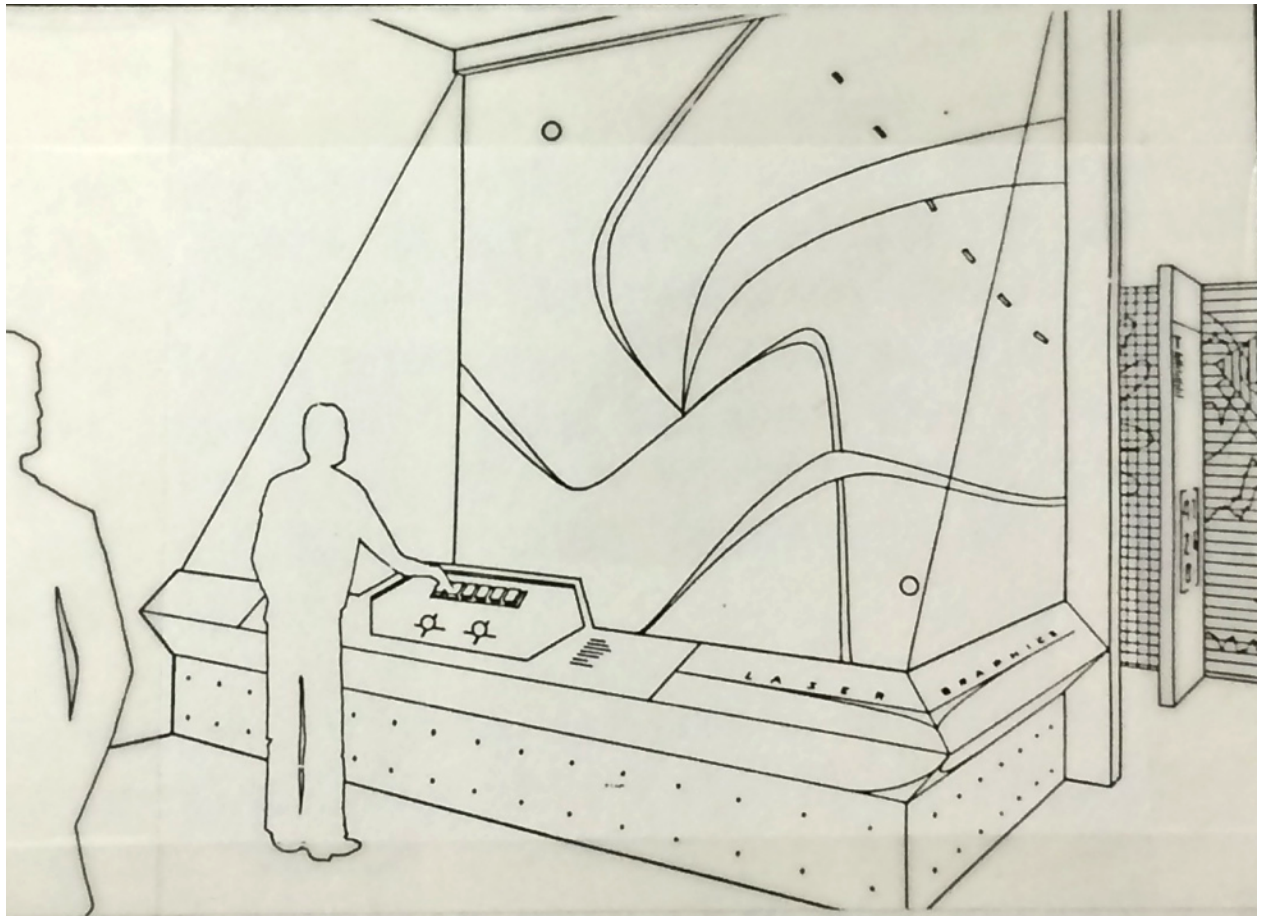
NING OCTOB

Diane Schwartz works on her game "VOILA" (Vasarely-inspired Optical Art) in the Electronic Visualization Laboratory at University of Illinois-Chicago. Schwartz's game was featured as part of a recent exhibit at the Museum of Science and Industry. Visualization will play a large role in the future of engineering. (Staff photo by Bill Ackerman)

VOILA (Vasarely-inspired Optical Art), 1988, by Diane Schwartz, © EVL

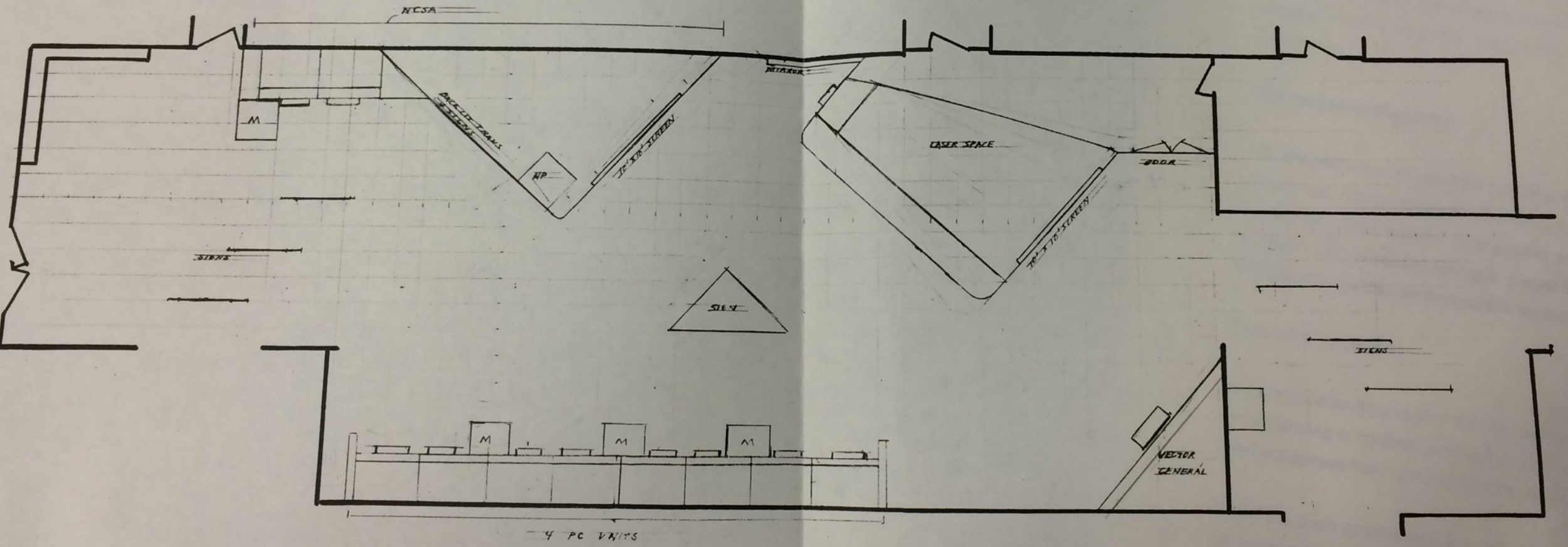
ZAnimation Jr. , 1987, by Fred Dech, © EVL





Exhibition view at SIGGRAPH’88, and an artist rendering of the exhibit. ©EVL

PHScolograms, © (Art)^{n}, In: ArtFutura Catalog 1991


NCSA
M
BACKLIT TRANS
SIGNS
HP
11'X8' SCREEN
MIRROR
LASER SPACE
DOOR
10'X10' SCREEN
SIGNS
SIGNS
M
M
M
4 PC UNITS
VECTOR
GENERAL
0
5
10

Conclusions and Future Work

Preservation and significance of EVL history

Artifacts found at the EVL offer deep insight of a transition period

Many questions unanswered, and further details need to be examined in depth

A complete history of EVL is necessary.

The Interactive Image contrasts greatly with the lack of documentation available

Exhibiting interactive art proved to be an effective way to encourage collaboration between artists and scientists

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