Feb. 28th

Kenneth C. Knowlton

Born: Feb. 28, 1931;

Springville, New York

Knowlton is known for the computer generated image, “Studies in Perception I,” which he created in 1967 with Leon Harmon. It was intended as a prank, and was hung on the office wall of an absent colleague (Ed David) to surprise him upon his return. The 12-foot long image was a reclining nude (the dancer Deborah Hay), created by scanning a photograph, converting the voltages to binary, and assigning the numbers to twelve typographic symbols based on their levels of gray.

Ken Knowlton. A self-portrait. http://www.kenknowlton.com/

After an informal press gathering on the topic of "Art and Technology" in Robert Rauschenberg’s loft [Oct 13], the image found its way into *The New York Times* (at a reduced scale) on Oct. 11 1967. It was at the top the first page of the second section, and may have been the first time that the *Times* printed a 'picture' of a naked person.

The image was also shown at several of the early computer art exhibitions: “The Machine as Seen at the End of the Mechanical Age” [Nov 27] and “Tendencies 4” [Aug 3].

“Studies in Perception I” was just a single example of Knowlton's wider experiments with photomosaics. Of more significance was his development of BEFLIX (Bell Flicks) at Bell Labs in 1963, which was most likely the first animation language.

Knowlton used BEFLIX to create animated films for educational and engineering purposes, including the ten-minute silent “A Computer Technique for the Production of Animated Movies” (1964). Knowlton has unfairly called it “unbearably dreary and highly schematic, ” but it was only the third computer animated film; the first was also made at Bell Labs, but by E.E. Zajac [Jan 8].

BEFLIX was implemented using FORTRAN II Assembly Program (FAP) macros, and ran on an IBM 7094 [Nov 30]. It employed a Stromberg-Carlson 4020 microfilm printer for output. Each generated frame contained eight shades of grey and had a resolution of 252 x 184 pixels.

Spy Satellite Launched

Feb. 28, 1959

"Discoverer 1" was the first of a series of US spy satellites that formed the Corona programme, and became the first man-made object put into a polar orbit. However, it was only a prototype so didn’t contain a camera, making it an ineffective peeping-tom.

Corona was established to watch over the Soviet Union, and to develop the technologies for returning photographic film to Earth from space.

On [Feb 22] 1995, KeyHole images from this programme (and many later ones) started to be declassified, and can now be browsed online.

First Commercial Game

Feb. 28, 1977

Most seasoned historians believe that Encounter (perhaps with a “!”), which probably went on sale today, was the first commercial microcomputer game, or at least the first real time strategy game.

A few sources claim Encounter was released in 1975, but this seems unlikely since the company selling it, "Objective Design," was only incorporated on Dec. 21 1976.

Encounter was played on a grid of squares (called “districts”), with the objective that one player wipe out all his opponent’s districts.

The game was coded in 8080 assembly [April 18], and so could run on an 8080 [Dec 16] or Z80 [March 9], with 4K bytes of RAM. With complete rules and source code, the game cost $16.95 on paper tape or $19.95 on magnetic tape.

Objective Design had more success with their “Star Wars” [May 4] game which came out during the Second West Coast Computer Faire [April 16] in 1978.

Other contenders for first commercial game include the version of Spacewar! (again the “!” seems optional) sold by Cromemco [Nov 12], and MicroChess [Dec 18].

OSI Model

Feb. 28 - March 2, 1978

The first version of the Open Systems Interconnection (OSI) model was released on this day in Washington, DC. The framework, developed by Charles Bachman [Dec 11], had the aim of standardizing computer networking by replacing all the existing protocols with a suite consisting of seven layers of abstraction.

Not surprisingly, it was resisted by many vendors, and users with significant investment in the old technologies; they claimed OSI was too complicated, too difficult to implement, and therefore too expensive.

A revised standard was published by the ISO [Feb 23] in 1984, but in the end, TCP/IP won out [Jan 1], due to its more pragmatic approach to networking: it uses just four layers, and is based on existing protocols and implementations.

However, OSI is still around, now acting as a tool for describing protocols (including TCP/IP). It's known by the catchy title, ISO/IEC 7498-1.

ESPRIT

Feb. 28, 1984

The European Commission's ten-year ESPRIT (European Strategic Programme for Research and Development in Information Technology) programme began on this day.

There were five favored areas: microelectronics, software technology, advanced information processing, office systems, and computer integrated manufacturing.

Eventually, five ESPRIT programmes (ESPRIT 0 to ESPRIT 4) were run, ending in 1998 when it was succeeded by the "Information Society Technologies" (IST) programme.

Some of the projects that ESPRIT supported:

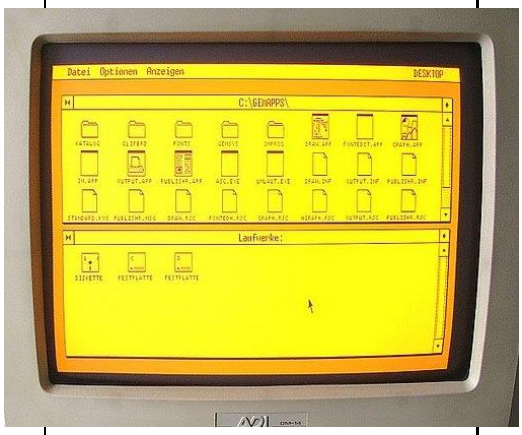
- SIP - Advanced Algorithms and Architectures for Speech and Image Processing;
- The BBC Domesday Project, to mark the 900th anniversary of the Domesday Book [April 9];
- CGAL, the Computational Geometry Algorithms Library;
- Web for Schools, which introduced the Web to secondary schools in Europe.

GEM Released

Feb. 28, 1985

GEM (the Graphics Environment Manager) was a user interface created by Digital Research (DRI) that ran on top of MS-DOS [Aug 12].

GEM is known primarily as the GUI for the Atari ST series [Jan 10], but was also available for IBM PC-compatibles. It even acted as the GUI core for a few MS-DOS programs, such as "Ventura Publisher".



A PC displaying the GEM desktop. Photo by Rolf Hartmann. CC BY-SA 3.0.

GEM started life at DRI as the GSX (Graphics System Extension) library, written by Don Heiskell and Lee Jay Lorenzen. Lorenzen had recently left Xerox PARC [July 1] where he'd developed an icon-based desktop system called "Lone Star". Heiskell, Lorenzen, and John Meyer later co-wrote "Ventura Publisher", which may explain its use of GEM.

GEM consisted of three parts:

- the VDI (Virtual Device Interface): responsible for low level drawing;
- the AES (Application Environment Services): the window manager, and other GUI elements;
- the Desktop: drag-and-drop based file management.

Apple sued DRI in what would turn into a long dispute over GEM's “look and feel,” which bore an uncanny resemblance to the Macintosh [Jan 24]. DRI reacted by releasing the “lawsuit friendly” GEM Desktop 2.0 in March 1986.

The other elephant-in-the-room was MS Windows which was released on [Nov 20] 1985, and eventually improved enough [May 22] to kill off competitors like GEM. However, FreeGEM, released in 1999, lives on.

Bookshelf not Kosher

Feb. 28, 1995

In 1992, “The First Electronic Jewish Bookshelf”, a digital version of twelve books on Judaism, including pictures, drawing, and music, was published on CD-ROM by ScanRom Publications.

The company was tiny, consisting of Irving Green, his wife, and son, and they were later thrilled to be featured in a Microsoft-produced marketing brochure.

However, on this day they received a letter from Microsoft's lawyers upset over their use of “Bookshelf”. The letter noted: “We believe this use is likely to cause confusion with Microsoft’s ”Bookshelf" [Oct 4] and “Bookshelf Series” trademarks, and so is an infringement of Microsoft’s rights."

The Greens discovered that, in the context of CD-ROMs at least, Microsoft had owned “Bookshelf” since April 24, 1990.

The term had been registered by Ampro Computers in 1987, but Microsoft challenged Ampro’s trademark in 1988, claiming that the word “is the common descriptive name for a library, portfolio or collection of books… and therefore in the public domain and available for [Microsoft] and other commercial users to use fairly to describe their goods.”

After some haggling, Microsoft bought the rights to “Bookshelf” from Ampro.

In response to the letter, Green pointed out that because of the tiny size of his business, he couldn't afford to change the software’s name. He also couldn’t afford a prolonged legal battle. Apparently, Microsoft relented since it’s still possible to buy a copy of the "Jewish Bookshelf”.

Graphene Transistor

Feb. 28, 2007

A research team led by Sir Andre Geim at the Manchester Centre for Mesoscience and Nanotechnology published details on their graphene-based transistor in *Nature Materials*. The device was less than 10 nanometres wide, and could be turned on or off by moving a single electron.

Graphene transistors are one possible future for microprocessors, offering speeds up to 1000 times faster than silicon, in much smaller chips, and with lower voltage consumption.

Graphene consists of one-atom-thick layers of carbon atoms arranged in hexagons, which allow electrons to travel over their surfaces at great speeds. It is the thinnest and strongest material known, and nearly transparent.

Graphene of this type was first produced by Geim and Sir Konstantin Novoselov in 2004. Their research led them to being awarded the 2010 Nobel Prize in Physics.

Geim received an Ig Nobel Prize [Oct 3; Oct 5] in 2000 for using the magnetic properties of water to levitate a frog. He is the only person to hold both prizes.
