Sir Arthur Charles Clarke

Born: Dec. 16, 1917;

Minehead, England
Died: March 19, 2008

One of the great SF authors [Jan 02], probably best known for the story that became the movie: "2001: A Space Odyssey" [April 2].

Arthur C. Clarke on one of the sets of "2001: A Space Odyssey" (1965). Photo by ITU Pictures. CC BY 2.0.

He was also a renowned futurist. For example, in a 1974 interview Clarke was asked how a life would change for our children: "He will have, in his own house, not a computer as big as this, [points to a nearby minicomputer], but at least, a console through which he can talk, through his friendly local computer and get all the information he needs, for his everyday life, like his bank statements, his theatre reservations, all the information you need in the course of living in our complex modern society, this will be in a compact form in his own house … and he will take it as much for granted as we take the telephone."

Clarke's short story, "Dial F For Frankenstein" [Jan 00], was one of the inspirations for Tim Berners-Lee's [June 8] development of the Web [March 12].

Clarke was one of the first people to suggest the use of geostationary satellites as telecommunications relays, in a letter to *Wireless World* in Feb. 1945.

In "Profiles of the Future" (1962), he proposed three 'laws':

- First law: When a distinguished but elderly scientist states that something is possible, he is almost certainly right. When he states that something is impossible, he is very probably wrong.

- Second law: The only way of discovering the limits of the possible is to venture a little way past them into the impossible.

- Third law: Any sufficiently advanced technology is indistinguishable from magic.

In the 1950's he advised the creators of the UK comic strip, "Dan Dare, Pilot of the Future", on technical matters.

He has been called the "Prophet of the Space Age".

Frieder Nake

Born: Dec. 16, 1938;

Stuttgart, Germany

Nake was one of the "3N" computer graphics pioneers, along with Georg Nees [June 23] and A. Michael Noll [Aug 29]. They all participated in the "Cybernetic Serendipity" exhibition in London [Aug 1]. His first show in Stuttgart in Nov. 1965 was only predated by exhibitions by Nees (also in Stuttgart), and Noll and Bela Julesz [Feb 19] in NYC that same year.

His early artwork used the Graphomat Z64, a flatbed plotter developed by Konrad Zuse [June 22] at the Technical University of Stuttgart. Typical work included visualizations of matrix multiplications (1967/68), which utilized a variety of programming languages, from assembly to PL/I [June 25].

Transistor Test

Dec. 16, 1947

Prev: [Dec 29] Next: [Dec 23]

In 1945, William Shockley [Feb 13] organized a solid-state physics group at Bell Labs to look into semiconductor replacements for vacuum tubes and relays. His foresight paid off when John Bardeen [May 23] and Walter Brattain [Feb 10] ran the first successful test of their semiconductor amplifier on this day, the prototypical point-contact transistor.

They applied two gold contacts to the surface of a small slab of high-purity germanium. The voltage on one contact modulated the current flowing through the other, amplifying the signal by up to 100 times.

Bardeen, Brattain, and Shockley were jointly awarded the 1956 Nobel Prize in Physics [Nov 1].

Bardeen and Brattain were not always in total agreement with Shockley over how the research should be developed. One bone of contention was that Shockley wanted the transistor patented exclusively under his name [Oct 3]. Another source of irritation was the widely circulated publicity pic of the trio – it showed Shockley sitting in front of a microscope, as if he had done the hands-on work, while the other two stood behind him, implying a lesser role. In fact Shockley was seldom in the lab. This picture circulated widely, and even appeared on the cover of *Electronics* magazine in Sept. 1948.

Whirlwind on TV

Dec. 16, 1951

Jay Forrester [July 14] and the Whirlwind computer [April 20] appeared on Edward R. Murrow's "See It Now" programme, via a link to MIT's Digital Computer Lab. It was probably the first time a real computer had been seen on TV.

Forrester started the demo by proudly pointing out one of the

machine's Williams-Kilburn tubes [Dec 11] used for storage. However, these were dumped two years later, replaced by Forrester's more reliable core memory [May 11].

The first demonstration involved another TV link to the Pentagon where Admiral Bolster asked to see a calculation of the Navy's Viking Rocket flight path. Forrester showed the rocket's path on an oscilloscope display, which probably represents the first ever publicly seen computer animation. Bolster remarked that "it looks very good to me."

The second demo was a compound interest problem involving the sale of Manhattan. This was illustrated by Forrester waving a piece of paper tape around while two assistants stood in the background doing 'something'. The result was then printed on a typewriter.

Screenshot of Jay Forrester and the Whirlwind on "See it Now" (1951). (c) MIT and CBS.

The third demo had the Whirlwind play music, via a speaker attached to the 13th bit (Bit 13) of Whirlwind's accumulator. To play a tone, a program had to hold the bit value constant for half the period of the desired frequency, then flip its value for the second half. This wasn't the first time computer music had been heard publicly; that honor belongs to the BBC [Aug 7].

The Whirlwind programs had been written by Charles Adams [Feb 6] and Jack Gilmore [Feb 16].

Burrell Carver Smith
Born: Dec. 16, 1955;
upstate New York

Burrell designed five different motherboards during the Apple Mac project [Jan 24]. He was especially skilled at using Programmable Array Logic chips to achieve the maximum functionality with a minimal chip count. For example, during Christmas 1980, he found a way to switch the Mac's processor from the Motorola 6809 (favored by Jef Raskin [March 9]) to the 68000 [Sept 29] (favored by Bud Tribble [Aug 3]). This change meant it was possible for the Mac to reuse the Apple Lisa's [Jan 19] user interface, built on top of Bill Atkinson's [April 27] QuickDraw.

Burrell also designed the board for Apple's LaserWriter [March 1], and a low-cost version of the Apple II [June 5] that eventually became the Apple IIe.

Burrell was a skilled impressionist, and was often asked to mimic the more authoritarian Mac team figures, such as Raskin.

IMSAI 8080
Dec. 16, 1975

IMS Associates released the IMSAI 8080, one of the first computers aimed at ordinary consumers. It featured an Intel 8080 [April 18], up to 64 KB of RAM, an optional cassette drive, and CP/M [June 22]. It was designed by IMSAI co-founder Joe Killian. Later, the first IMSAI floppy-disk drive was nicknamed the "Pizza Oven" due to its size.

The machine was designed to use the same S-100 bus and interchangeable circuit boards as the Altair 8800 [Dec 19] , but was much better built, had a better power supply, and a cool-looking front panel. It soon became more popular than the Altair, and nearly 20,000 units

were sold during its lifetime. In addition, it was used by Matthew Broderick in "WarGames" [June 3].

Following the success of the IMSAI 8080, the other IMSAI co-founder, William H Millard, launched a computer store franchise called "Computer Shack" (later renamed to Computerland) [Sept 21].

Visi On
Dec. 16, 1983

VisiCorp's "Visi On", developed by Scott Warren and Dennis Abbe, was a short-lived but highly influential GUI for IBM compatible PCs running MS-DOS [Aug 12]. It was notable for including numerous features that didn't become common in other GUIs for years. For example, it was fully mouse-driven, used a bit-mapped display for both text and graphics, and allowed the user to open several programs at once, each in its own window, that could overlap with other windows.

There were no scroll bars on the windows. Instead, the user had to right click on an area and drag the mouse. Window buttons were missing, replaced by text commands along the bottom of a window and the screen. There were no "window borders" you could drag to resize a window. That functionality was replaced with a "FRAME" command, and clicking on the screen to specify the new size.

"Visi On" was designed to be portable to other OSes and other CPUs besides the 8086 [June 8]. It did this by running on top of a virtual machine (called the "Visi Machine"), with only the very core (the "Visi Host") being machine specific. Applications were developed in "Visi C", a restricted subset of C.

The "Visi On" demos at 1982's fall COMDEX [Dec 3] were a huge success. Many people had to be repeatedly told that they were watching real demos not just animations. For example,

Bill Gates [Oct 28] mused that the PC was acting as a dumb terminal linked to a "real" machine like a VAX [Oct 25]. Although the demos were good, "Visi On" didn't ship for another year.

The software's main disadvantage was its hardware requirements. It needed 512 KB of RAM and a hard disk at a time when both were very expensive.

"Visi On"'s imminent release prompted Gates to announce on [Nov 10] 1983 that MS Windows would be available in May 1984. Windows eventually shipped on [Nov 20] **1985**, and still lacked many "Visi On" features.

National Cryptologic Museum Opens
Dec. 16, 1993

The National Cryptologic Museum is a great source of cryptological history, with the added spice of its affiliation with the National Security Agency (NSA [Oct 24]) Indeed, the museum is located just two blocks from NSA headquarters at Fort George G. Meade, Maryland. A SWAT team could probably storm the institute in under a minute.

A US Navy Bombe. Photo by the National Security Agency.

The museum's collection includes several working Enigma machines [Feb 23], with two interconnected so that visitors can send and receive coded messages. There's also a US Navy Bombe [Sept 4], and exhibits dating from the Revolutionary War.

The library includes declassified Enigma messages, commercial codebooks, oral histories, and the first printed book on cryptology, the 1518 "Polygraphiae Libri Sex" by the German mystic Johannes Trithemius.

Microsoft Church
Dec. 16, 1994

A news story, purportedly issued by the Associated Press, began circulating online which announced that Microsoft had bought the Catholic Church. The article quoted Bill Gates [Oct 28] as saying that he considered religion to be a growth market and that, "the combined resources of Microsoft and the Catholic Church will allow us to make religion easier and more fun for a broader range of people."

On this day, Microsoft issued a formal denial of the acquistion.

The story was probably the first Internet hoax to reach a mass audience, and its success led to a spate of similar press releases. For example, one claimed that Microsoft had just purchased the US government, which meant that "United States citizens will be able to expect lower taxes, increases in government services, discounts on all Microsoft products and the immediate arrest of all executive officials of Sun Microsystems Inc. [Feb 24] and Netscape Corp. [March 25]."

CERN Chooses Physics
Dec. 16, 1994

CERN [Sept 29], birth place of the Web [Dec 25], may have received generous funding to build the Large Hadron Collider (LHC), but budgetary constraints in other areas meant that on this day it decided to discontinue its leadership role in developing the Web.

This move had been anticipated, and back in Sept., the European Commission and CERN had proposed the creation of an international consortium, the WebCore project, to take things over. Eventually, the commission turned to INRIA (the French National Institute for Research in Computer Science and Controls), to take on CERN's role. Meanwhile, Tim Berners-Lee [June 8], left CERN at the end of 1994 to join MIT where he set up the World Wide Web Consortium (W3C) [Oct 1].

The Mac Clones
Dec. 16 1994

The first Apple II [June 5] clone, "The Orange", was shown off at the 1979 West Coast Computer Faire [April 16], and was quickly followed by several attempts to clone the Mac [Jan 24]. The main problem was that most of them required official ROMs from donor Macs in order to function.

On this day, Apple began licensing System 7.x [May 13], Mac ROMs, and motherboard designs to several companies, including Power Computing [Sept 2], Radius, and Shaye, at a flat rate of $50 per machine.

During the next year, Apple sold 4.5 million Macs, but with the growth of the clone programme and competition from Windows 95 [Aug 24], that dropped to 4.0 million in 1996, and 2.8 million in 1997.

After Steve Jobs [Oct 28] regained control of Apple [Dec 20], one of his first tasks was to renegotiate the clone licenses to increase Apple's royalties. This made it almost impossible for the clone makers to continue undercutting Apple on price and still make a profit.

Then Jobs cannily took advantage of a clause in the agreement that specified that

cloning only applied to System 7.x. He renamed Mac OS 7.7 as Mac OS 8, thereby making it unavailable to the licensees. By June 1998, Apple again stood alone in the Mac market.

Creative Commons
Dec. 16, 2002

The first set of Creative Commons (CC) copyright licenses was released by Eric Eldred, Lawrence Lessig and Hal Abelson [April 26].

There were six different licenses to give creators some choice in how freely others could use their work, inspired in part by the FSF's [Oct 4] GNU General Public License (GNU GPL).

CC is at the forefront of the copyleft movement, which provides an alternative to the "all rights reserved" copyright, by offering different forms of "some rights reserved".

CAN-SPAM Act Signed
Dec. 16, 2003

The CAN-SPAM Act was an attempt to control the growing deluge of junk e-mail.

CAN-SPAM was short for "Controlling the Assault of Non-Solicited Pornography And Marketing Act", with the clever pun that "CAN" implied "canning" (as in putting an end to). However, the act soon earned the moniker, "You-Can-Spam", because it legalized so many forms. In particular, it didn't require e-mailers to get permission before they posted out marketing promotions. It also prevented states from enacting stronger anti-spam protections, and prohibited individuals who received spam from suing the spammers.

The first lawsuits using the Act were filed on [March 10] 2004.

For more spam, see [Jan 24], [March 31], [April 12], [May 3].