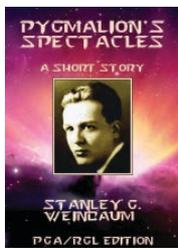


1930s



**June 1935:** Stanley G. Weinbaum publishes "Pygmalion's Spectacles," a short story that conjures goggles capable of creating an interactive movie "that gives one sight and sound...taste, smell, even touch."

1960s

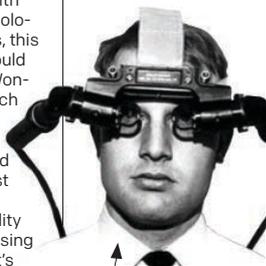
**August 1962:** Cinematographer Morton Heilig patents the **Sensorama**. The arcade-like machine displays 3-D images, vibrates, and produces sound, wind, and simulated scents. Titles include *Motorcycle*, *Dune Buggy*, *Belly Dancer*, and *I'm a Coca-Cola Bottle*.

**1965:** Computer scientist Ivan E. Sutherland pens his essay "The Ultimate Display," describing a computer-wired room capable of manipulating matter. With advanced technologies, he predicts, this virtual realm "could literally be the Wonderland into which Alice walked."

**1968:** Sutherland develops the first head-mounted augmented-reality display, an imposing contraption that's suspended from the ceiling. He calls it the **Sword of Damocles**, a reference to the mythological sword dangling over the king's throne.

1970s

**1975:** Artist and engineer Myron Krueger creates **Video-place**, an artificial-reality laboratory that uses projectors, video cameras, special hardware, and colored silhouettes to place users within an interactive environment.



1980s

**March 1982:** The Atari Sunnyvale Research Laboratory is founded to explore virtual reality and video games, only to be shuttered two years later.



**July 1982:** **TRON** is released. The movie's gladiatorial arena—complete with light cycles and Pong-inspired disc battles—catapults visions of virtual reality into mainstream culture.

**September 1982:** Atari employee and musician Thomas Zimmerman, inspired by playing air guitar, patents the **Data-Glove**, which features an optical flex sensor that tracks finger bending.

**1986:** After spending decades in the U.S. Air Force developing some of the first helmet-mounted displays, Thomas Furness helms the **Super Cockpit** program: a flight simulator that trains pilots in a virtual 3-D environment.

**1989:** Mattel develops a stripped-down version of the **Data-Glove**, the **Mattel Power Glove** (\$75), for Nintendo gaming systems.

1990s

**August 1990:** Chicago sees the opening of **Battletech Center**, a virtual gaming parlor where teams face off in enclosed cockpits with multiple screens and joysticks.

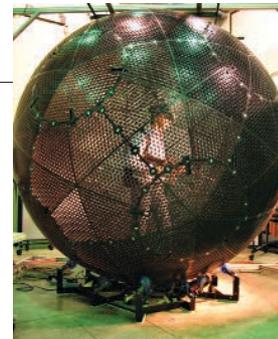
**January 1992:** "It's being able to experience unreality without alcohol and without drugs," Lawrence Winkie, owner of San Francisco bar Club DV8, tells the *New York Times*, adding that he plans to equip his club with four Dactyl Nightmare gaming machines—at \$65,000 a pop.

**March 1992:** Sci-fi flick *The Lawnmower Man* is released, featuring a virtual reality pioneer (Pierce Brosnan) who transforms a dim-witted man into a virtual god.



**1993:** Thomas Massie invents the **Phantom**, a computer interface that enables users to "touch" virtual objects in cyberspace by inserting their fingers into swiveling thimbles connected to mechanical arms.

**1993:** After two years of development, Sega officially discontinues its VR headset due to concerns that its



2000s

**2003:** The U.S. Army studies **virtual reality exposure therapy (VRET)**, in which soldiers suffering from PTSD are immersed in virtual simulations of combat.

ultra-realism could cause injury during play. Testers report experiencing motion sickness caused by the headset's inept 3-D technology.

**October 1993:** Brit rocker Thomas Dolby and Intel create the first virtual reality system for music. At the Guggenheim Museum in New York, visitors observing a virtual reality string quartet are able to alter the music by "tickling" the musicians.

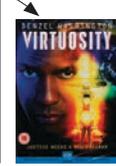
**December 1993:** NASA launches a **VR lab** at Johnson Space Center to train astronauts.

**March 1994:** Colt Virtual Reality Ltd. creates a virtual reality package called **Vegas** that allows architects and civil engineers to simulate the evacuation of crowds in the event of a building fire.

**April 1995:** General Motors opens the **Detroit Virtual Reality Center**, where an immersion room and head-mounted displays allow engineers to fine-tune car models.

**August 1995:** Nintendo launches **Virtual Boy**, a tabletop video game console. Its red-and-black stereoscopic display is such a strain to watch that players are warned to rest their eyes every 15 minutes. A commercial flop, it is discontinued the following year.

**August 1995:** **Virtuosity** opens: Denzel Washington enlists a new virtual reality program to apprehend a computer-generated entity played by Russell Crowe.



2010s

**August 2012:** Palmer Luckey launches a Kickstarter campaign for the **Oculus Rift** and raises \$2.4 million.

**March 2014:** Facebook acquires **Oculus** for \$2 billion. "Virtual reality was once the dream of science fiction. But the internet was also once a dream, and so were computers and smartphones," writes Mark Zuckerberg in the announcement.

**June 2014:** Google unveils **Cardboard** to bring VR to the masses. The \$20 cardboard contraption transforms your smartphone into a VR headset display.



**January 2015:** Hewlett-Packard releases the **HP Zvr Virtual Reality Display**, the first commercial system to create a holographic 3-D image with glasses.

**June 2015:** French fashion house Dior launches **Dior Eyes**, a high-def virtual reality headset that takes viewers backstage at its runway shows.

**November 2015:** Samsung introduces the **Gear VR** headset (\$99), with onboard touch controls that can be used with the Galaxy Note 5 tablet or the Galaxy S6 smartphone.

**March 2016:** Oculus Rift systems ship to the original Kickstarter backers and preorderers. New orders for the set, priced at \$599, are slated to ship in July.

# Virtual Insanity

A look back at the prototypes, fantasies, and flops that paved the way for this month's rollout of the Oculus Rift. By Lauren Murrow and Graham Hacia

IN 2012, an unknown 20-year-old entrepreneur named Palmer Luckey launched a Kickstarter campaign for the Oculus Rift, which he billed as the first truly immersive virtual reality headset for video games. He hoped to make \$250,000 to develop his product; he ended up raking in \$2.4 million and 10,000 pre-orders. "The sensation is like watching an IMAX screen that never ends," raved the *New York Times*. Two years later, Oculus was acquired by Facebook for a cool \$2 billion.

Tech novices might be forgiven for assuming that virtual reality was a sure bet for the Next Big Thing, fated to join the ranks of the iPhone and the tablet. In fact, virtuality's road to success has been a long and bumpy one. In honor of the Rift's commercial release on March 28, we take a look back at the mind-bending technology's past, from the Mattel Power Glove to systems for performing surgery, building cars, and battling PTSD. ■

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