

## Blu-Ray Genesis

Did you ever wonder **WHO** invented the **Blu-ray** system? Here is the **Genesis** of that marvelous data storage/retrieval system.

**NOTE:** Previous **mechanical** means/methods of computing have **NOT** been included herein. **All** the steps listed herein, (in the author's opinion), are the highlights of transition, from the beginning, to final implementation of the **Blu-ray** information system

**Basic underpinnings** of steps leading to **Blu-Ray**, are as follows:

**Alexander Graham Bell, Thomas Edison, Michael Faraday, Benjamin Franklin, Luigi Galvani, Lord Kelvin, George Ohm, Nikola Tesla, Alessandro Volta, George Westinghouse, ALL** contributed to the defining of electricity, the properties, the magic, of the energy called .... ***ELECTRICITY!***

**1855** Heinrich Geisler invented the first ***VACUUM PUMP.***

**1897** Karl Ferdinand Braun invented the first ***Cathode Ray Tube.***

**1928** Philo Farnsworth invented the first ***Television System***

**Step 1** In **1938** **Allan B. Dumont** manufactured the first **all-electronic Television Set**. He, (his company), was responsible for setting up the first television station (**W2XWV**), in the United States, (the world?). Later he changed that station name to **WABD**, which were the initials of his name, preceded by the letter ... "**W**".

**NOTE:** In the **New York City** metropolitan area, it was listed as **Channel 5**. It was the first program, on the first station, **ever** to be regularly telecast. It came on **(5)** days a week, at **(5)** P.M. and featured, "**Howdie-Doodie**", alongwith **Uncle Bob!**

**Step 2** Between **1939** and **1942**, **Professor John Atanasoff** & a graduate student named **Clifford Berry**, built the world's **1<sup>st</sup>** Electronic computer. It also had several innovations in computing, including a **binary system**, (based on an arithmetic series of, **0's** and **1's**). Also included were a method of **parallel-processing**, **regenerative memory**, and a **separation of memory and computing functions**.

**Step 3** In **1956**, **Carmine Cifaldi** created an **Electron Gun**, that cut the diameter of the Electron stream, to **HALF**, (the normal size), in a Cathode Ray Tube (**CRT**). It could then impact **smaller particles** of Phosphor.

By impacting **smaller particles** of Phosphor, alongwith the proper, electronic circuitry, it was able to **DISPLAY** much more information, by way of the **DOUBLE-QUADRUPLE PRINCIPLE (DQP)**. This enabled the electron gun, able to portray a finer-detailed picture, via **1050-lines**, (versus **HDTV, 1080-lines**, some **50** years later).

**NOTE:** The American system has always shown a (525) line definition, (between lines), versus the Japanese-sponsored 1,080 line system. HDTV, (as well as Cifaldi's UHD 1050 line system). They both have the need to store (4) times the amount of data, than that of the (525) line system. Hence, the invocation of the DOUBLE-QUADRUPLE PRINCIPLE, (DQP), was **absolutely necessary/ had to be observed!**

For more complete information about the Double-Quadruple-Principle (DQP), see the Website [www.cifaldi.org](http://www.cifaldi.org) Klik on ... Files .... Klik on ... Double Quadruple ... or simply **click on the following link:**

<http://www.cifaldi.org/files/DQP%20Double%20Quadruple%20Principle%20%20Explantion%20Jan%2010-2009.pdf>

The importance it had in a Cathode Ray Tube (CRT), relating to Television signalization, **AND** the operation of the Blu-Ray system, can **NOT** be **overstated!**

**Step 4** In 1960, the **FIRST** Electronically-produced laser, was made by Theodore Maiman, while working at the Hughes Research Facility in California.

**Step 5** In 1965, James Russel invented the Compact Disc.

**Step 6** In 1969, Paul Gregg invented the Optical Disc.

**Step 7** In 1993, the pioneering of Cifaldi's use of the DOUBLE-QUADRUPLE PRINCIPLE, in the manufacture of Picture Tubes, to get a finer-detailed picture, alongwith Steps 4, 5 & 6 herein, were the immediate first steps **needed**, to create the Blu-Ray DVD disc system.

**Step 8** In 1995, a consortium of (4) companies , (Matsushita, Phillips, Sony, Toshiba), used the previous mentioned technological advances, to produce the 1st DVD players.

**Step 9** In 2002, based on the previous advances, an expanded consortium of (14) leading Electronic companies, (Apple, Dell Hitachi, HP, JVC, LG, Mitsubishi, Panasonic, Pioneer, Phillips, Sharp, Sony, TDK and Thomson), joined forces, and in 2004 established the Blu-ray Disc Association.

**NOTE:** **NO** individual person invented the DVD player That is why they announced, that they were the "Founders" of the Blu-ray Disc System ...**NOT** ...**THE INVENTOR thereof!** Again, based and built, on the previous disclosures herein!

### **Explanation of Blu-Ray Laser Disc for a non-technical person!**

A blue-violet Laser-Beam, **already** has a smaller diameter laser-beam, via a wavelength of (405 nm), versus a Red Laser Beam (650 nm). This diameter is reduced even further, when presented thru a high numerical-aperture lens. The resultant action of the lens is responsible, for yet further reducing the diameter, of the Blu-violet Beam.

This narrower **Blue-Violet** laser beam, much like **Cifaldi's Electron Gun**, produced/ became subject to, this **DOUBLE-QUADRUPLE PRINCIPAL (DQP)**.

However, as in **Cifaldi's** case, the **Blu-Ray system** was also achieved through, the **INVERSE**, of the **DOUBLE-QUADRUPLE PRINCIPLE (DQP)**.

In the final analysis, the **Blu-Ray Laser (25 GB)**, [**per side**] system, may now store more than **(5)** times the amount of information, than the **Red Laser Beam**, which holds **(4.7 GB)**, of data. If new technology is further successful, there may be yet a **2nd** layer of data storage, which may be applied to the **Blu-Ray DVD**. This then, would yield **(8)** times **MORE** information, than the heretofore conventional, **Red laser** system(s).

**Normally**, the **DOUBLE-QUADRUPLE PRINCIPLE (DQP)**-assisted, smaller-diameter laser beam, **would** produce **double** the amount of Horizontal lines. It **ALSO would** read/ write, **(2 X)** the data on the lines, themselves. Therefore, it would then result in **(4)** times the amount of data, available for use!

**Note:** However, in the **Blu-Ray DVD** case, the **DQP**, **only** provides the basis for storing **(3+)** times as much information, ... (the **Blue Laser Beam**, is **NOT** exactly **(1/2)** the diameter of the **Red Laser system**)....

The narrowing of the diameter of the **Blue/Violet Laser Beam**, via the **numerical lens**, provides the additional, **(1+)** storage capability .... for a total of **(5)** times, (instead of the usual **(4)** times) data, which may be written/ read, on the **DVD** disc!

For the time being, (circa) **2007**, the **Blu-ray** system can store as much as **(50)** GigaBytes of data, (on two sides). This would be critical for displaying **High-definition Television, (HDTV)**. That is because, (as discussed hereinbefore), the high-definition use, needs **(4)** times as much space, than the regular T.V., as dictated by the **DOUBLE-QUADRUPLE PRINCIPLE (DQP)**.

See in **Google... Double Quadruple Principle ... DQP Explanation 10-27-08**