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## **SCIENCE STORMS KEY ARTIFACTS**

*Science Storms* contains more than 200 important, unique artifacts—both historic and contemporary—that illuminate the basic scientific principles highlighted in the exhibit. Below is a sampling of some of the compelling items on display.

**Millikan's Oil Drop Apparatus** – Considered one of the most important scientific experiments in history, Robert Millikan designed and used this drum-like apparatus to measure the charge of a single electron for the very first time. Millikan won the Nobel Prize for this experiment in 1923.

**Demonstration Edison Light Bulb** – The first light bulb ever lit in public. The light bulb was used at the historic 1879 New Year's Eve demonstration of the Edison Lighting System in Menlo Park, New Jersey. Courtesy of the Collections of the Henry Ford, Dearborn, Mich.

**Sand Fulgurite** – Fulgurites are naturally occurring hollow tubes of sand and glass formed when lightning of at least 3,270 degrees Fahrenheit strikes and instantaneously melts the silica in sandy ground. This fulgurite is considered very large, and was found by prospectors in northwestern Arizona in 2009.

**Turtle Probe** – This contemporary artifact, used by storm chaser Tim Samaras, was deployed in June 2003 into the F4 Manchester tornado. The tornado hit the probe full on with wind speeds estimated at up to 260 mph. The direct hit enabled the probe to record the lowest barometric pressure drop ever recorded, 100 millibars.

**Jeff Gordon's Racing Suit** – Four-time NASCAR Cup Champion Jeff Gordon's suit is a high-tech fire prevention system made of a fire-resistant material called Nomex that cannot be washed out or worn away.

**Newtex Fire Entry Suit** – This suit is designed to withstand radiant heat up to 3,000 degrees Fahrenheit and is used in firefighting, scientific research, and industries like steel mills. This type of protection has allowed a firefighter to walk through a 2,500 degree Fahrenheit burning tunnel three times with no injuries.

**Early Fire Grenades** – Prior to the invention of modern fire extinguishers, pre-1900 glass fire grenades were thrown at fires to put them out. They are filled with a saline solution.

**DART II Buoy** – This giant Deep Ocean Assessment and Reporting of Tsunamis (DART) buoy is a modern tool for detecting tsunamis and transmitting warnings. This buoy, decommissioned by the National Oceanic and Atmospheric Administration (NOAA) in 2008, recorded a tsunami resulting from an 8.3 magnitude earthquake in the Kuril Islands in Russia.

**Wimshurst Machine** – This electrostatic machine from 1884 is the largest ever built by scientist James Wimshurst. When functioning, the machine created sparks up to 30 inches long.

**Shape Memory Alloy Shirt** – When the weather warms up, this shirt can roll up its sleeves automatically.

**Ballet Pointe Shoes** – These 2009 D3o Evolution shoes use dilitant materials, which become more solid when stressed, in the toe box. This makes these ballet shoes supple, hardening only when the dancer goes *en pointe*. Gift of ballerina Jaclyn Betham.

**LI-900 Space Shuttle Insulation Tile** – This tile was made to protect the Space Shuttles during re-entry into Earth’s atmosphere. It is made of 99.9 percent silica and is 94 percent air by volume. This makes the tile very light, but also resistant to heat as high as 2,300 degrees Fahrenheit.

**B2 Stealth Bomber Skin** –This piece of B2 Stealth Bomber “skin” might use ferrofluids to reduce the radar signature of the planes, making them harder to see. The U.S. Air Force can neither confirm nor deny the use of ferrofluids on the surface of the B2 skin, as the actual coatings are classified.

**Foam Tire** – This 2010 tire is made of pneumatic foam. Unlike an air-filled tire, it cannot be popped and never needs to be refilled. Gift of Amerityre Corporation.

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