

# WOMEN IN SCIENCE

In the fields of Electronics, Physics, Engineering, and Space.

**HERTHA MARKS AYRTON (1854-1923)** was a British physicist who worked with electricity. She attended Girton College at Cambridge University where she studied mathematics. At the time, women could not earn degrees. Her research with the electric arc led to her development of improved carbon parts for lamps. Ayrton became the first woman elected to the Institution of Electrical Engineers in 1899. In 1902, she wrote her influential book The Electric Arc. She held patents for over 8 inventions, including an instrument for dividing a line into equal parts and an anti-gas fan used in World War I.

**MARIA GOEPPERT MAYER (1906-1972)** was born in Poland and attended the University of Gottingen in Germany where she earned her Doctorate in Physics. In 1930 she married Joseph Mayer, an American scientist, and moved to the U.S. Mayer continued researching and eventually began teaching. In 1948 she began researching the nucleus and its shell. Mayer won the Nobel Prize in Physics in 1963 for her work on the atomic nucleus. She became the first U.S. woman to win a Nobel Prize in Physics. Mayer continued researching and teaching until her death in 1972.



**MAE JEMISON (1956-)** attended Stanford University when she was sixteen and graduated with a B.S. in Chemical Engineering and a B.A. in African American Studies. Next, she attended Cornell Medical School and received her doctorate in medicine in 1981. Following this, Jemison spent two years in the Peace Corps as a medical officer. She also practiced medicine in Los Angeles before joining NASA in 1987. On September 12, 1992, Jemison became the first female African American astronaut to travel into space. While at NASA, she worked as a Science Mission Specialist aboard the Space Lab. Since 1993, Jemison has been teaching Environmental Studies at Dartmouth College.



**RANDICE-LISA ALTSCHUL** is a toy inventor who has developed the first disposable phone. The phone is as thick as three credit cards and is made from recycled materials. Altschul and engineer Lee Volte hold patents on the advanced technology used in the phone. The phone uses an elongated flexible circuit with metallic conductive inks.



Historical Electronics Museum

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**GRACE MURRAY HOPPER (1906-**

**1992)** received her degree in Mathematics and Physics from Vassar College. She then received her Ph.D. at Yale University. In 1943, Hopper joined the Navy WAVES and began working on the Bureau of Ordnance Computation Project at Harvard University. At Harvard, she developed programs for the Marks I, II, and III computers. Hopper continued researching computers with the Navy and private companies until her retirement in 1986. When she retired, Hopper held the rank of Rear Admiral.



first computer program. She also predicted that the machine might eventually be able to compose music and be used in scientific research. To honor her, an international computer language was given the name Ada.

**SALLY K. RIDE (1951- )** attended Stanford University where she received a B.S. in Physics and a B.A. in English in 1973, a M. S. in Physics in 1975, and a Ph.D. in Physics in 1978. Ride was accepted into the astronaut training program at NASA in 1978. On June 18, 1983, Ride became the



first American woman in space. For the next three years, Ride continued to work as a mission specialist on shuttle flights. In 1989, she left NASA to begin teaching at the University of California. Ride has also written numerous books about space and physics.

**VALENTINA TERESHKOVA (1937- )** was an

avid parachutist who became a Soviet cosmonaut. On June 16, 1963, she became the first woman in space. Tereshkova orbited the earth for almost 71 hours before returning home. In 1976, she earned her



degree in Technical Science from the Zhuykosky Air Force Engineering Academy. Following this, Tereshkova went on to become a prominent political figure in her country.

**LADY AUGUSTA ADA BYRON**

**LOVELACE (1815-1852)** was the daughter of the British poet, Lord Byron. In 1834, she met Sir Charles Babbage, who was trying to develop a calculating machine, and the two soon became friends. Ada had the idea of inventing a code system for the machine. This code was the world's

**EVELYN BOYD GRANVILLE**

**(1924- )** graduated from Smith College with a B.A. in Mathematics. She continued her education at Yale University where she received her M.A. and Ph.D. in Mathematics. In 1956, Granville joined IBM where she worked on the Mercury space project. In 1962, she began working at the North American Aviation Space and Information Systems Division. While there, Granville worked on numerous technical projects for the Apollo space program. In 1967, she began her long career as a professor at California State University.



Information and photos used in this booklet came from the following sources:

[www.physics.ucla.edu/~cwp/articles/ayrton/ayrton bio.html](http://www.physics.ucla.edu/~cwp/articles/ayrton/ayrton bio.html)

[www.math.buffalo.edu/mad/PEEPS/granville\\_evelynb.html](http://www.math.buffalo.edu/mad/PEEPS/granville_evelynb.html)

[www.agnesscott.edu/lriddle/women/love.htm](http://www.agnesscott.edu/lriddle/women/love.htm)

<http://hum.amu.edu.pl/~zbzw/ph/sci/mgm.htm>

<http://inventors.about.com/library/weekly/aa022801a.htm>

[www.gracehopper.org/gmh2002/gmh.html](http://www.gracehopper.org/gmh2002/gmh.html)

<http://www.jsc.nasa.gov/Bios/htmlbios/ride-sk.html>

[http://www.nasm.si.edu/nasm/aero/women\\_aviators/valentina\\_tereshkova.htm](http://www.nasm.si.edu/nasm/aero/women_aviators/valentina_tereshkova.htm)