May 2004

ZOOM in on america

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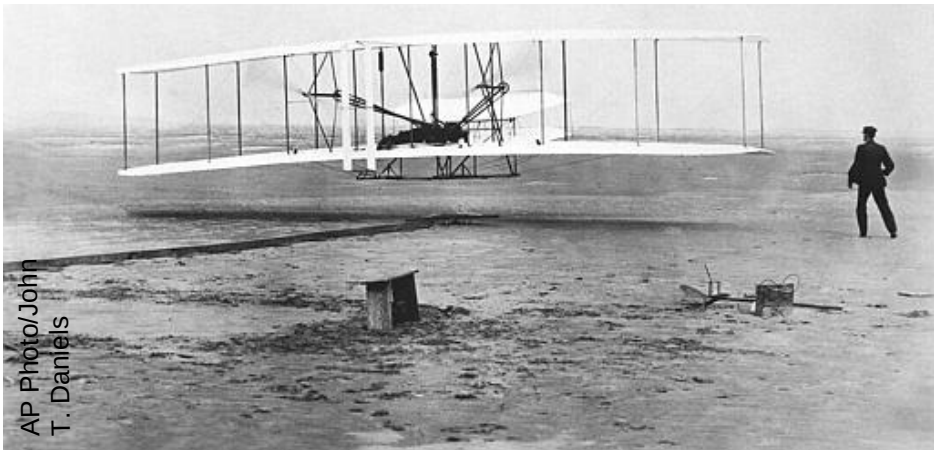
FROM KITTY HAWK TO MARS

Just over 100 years have passed since the Wright brothers made the world's first sustained, powered and controlled flight in a heavier-than-air flying machine. Many American scientists and engineers have been working towards flying farther, longer and higher ever since. Take a look at the timeline below showing American achievements from the Wright brothers' first flight to the landing of the Mars Rovers on the Red Planet.



AP Photo/John T. Daniels

December 17, 1903

In the photo on the left, Orville Wright is at the controls of the *Wright Flyer* as his brother Wilbur looks on during the plane's first flight at Kitty Hawk. Made of wood, wire and cloth, the plane remained aloft for 12 seconds and traveled a distance of 120 feet.

1903 — **First powered flight**

1927 — **First solo, nonstop trans-Atlantic flight**

1969 — **First walk on the Moon**

1976 — **First U.S. landing on Mars**

2004 — **Rovers land on Mars**

May 21, 1927

Charles Lindbergh landed in Paris after the first solo flight from New York across the Atlantic in *The Spirit of St. Louis*. He flew 5,810 kilometers in 33.5 hours.

July 20, 1969

Apollo 11 astronaut, Neil Armstrong was the first man to step onto the Moon. He was followed by Edwin "Buzz" Aldrin. They spent about two hours on the Moon, conducting experiments.

July 20, 1976

The unmanned U.S. spacecraft *Viking 1* landed on Mars. It was the first object to reach the planet in working condition. *Vikings 1 and 2* obtained images of the Martian surface.

January 3, 2004

Mars Exploration Rover *Spirit* landed on Mars. The photo on the right is a NASA image of *Spirit*. The six-wheeled vehicle is equipped to play the role of a geological explorer.

Sources: Library of Congress, NASA

(AP Photo/NASA)

Make a **Discovery** - or **Try** ;-)

High school students from across the United States participate in science projects. Such programs are offered by different research institutions and the United States government. Many students from abroad, including Hungary, are welcome to take part in the projects.

GLOBE

GLOBE is a worldwide education and science program for primary and secondary schools.

Students take scientifically valid measurements in the fields of atmosphere, hydrology and soils. Then they report their data through the Internet. They may create maps and graphs on the free interactive website to analyze their data.

Many distinguished high schools participate in GLOBE throughout Hungary.

To learn about GLOBE programs in Hungary, please visit the website of the Embassy's Regional Environment, Science and Health Office at www.usembassy.hu/cee-hub/

More information about GLOBE:

- **www.globe.gov**

ROCK AROUND THE WORLD

NASA needs your help!

Mars scientists are asking students from around the world to help them understand the Red Planet.

They would like you to send in a rock you or your classroom collected from your region of the world. NASA will use a special tool like the one on the Mars Rover to tell you what the rock is made of.

A picture of your rock will be posted on the web and you will receive a report on it.

More information:

- **http://marsprogram.jpl.nasa.gov/rockworld/**

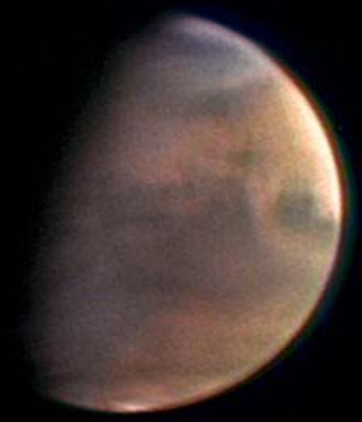
(Image: Copyright 2004 Pixel Perfect Digital, Inc.)

STUDENT ASTRONAUTS IN MARS EXPLORATION

In 2003 the Planetary Society conducted an international contest to select a group of students to work with the Mars Exploration Rover Mission team at the Jet Propulsion Laboratory in Pasadena, California. One of the winners was Dávid Turczi, a student of the Alternative High School for Economics in Budapest.

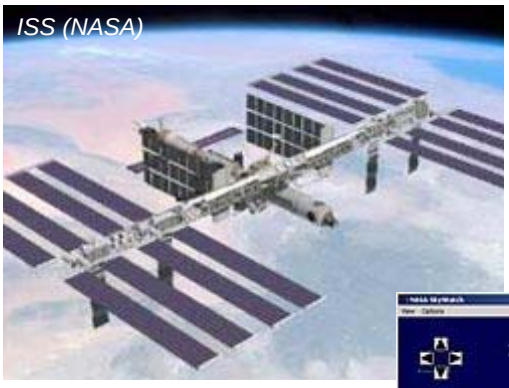
NASA's twin Mars Exploration Rovers, Spirit and Opportunity, are designed to study the history of water on Mars. These robotic geologists are equipped with a robotic arm, scientific instruments, and four pairs of cameras that allow them to have a human-like, 3D view of the terrain. The Student Astronauts analyze mission images and data as they are returned to Earth from the spacecrafts.

Read Dávid's journal from the mission at http://www.redrovergoestomars.org/studast_david.html



Mars is seen from a distance of about 5.4 million kilometers.(AP Photo/ ESA, DLR, HO)

Sky**Watch:** See ISS in Your Own Backyard!


ISS (NASA)

Under the right nighttime conditions you can see bright constellations, a dazzling meteor shower and even the **International Space Station**.

The Space Station is one of the most visible man-made objects in the sky, because it reflects sunlight and often looks like a slow-moving star. This can fool a casual viewer, but it also makes sighting the ISS easier if one knows when and where to look.

SkyWatch is NASA's Internet tool that provides the information needed to view the Space Station and other satellites. It allows users to track objects in the sky and easily locate them among the stars and planets.


SkyWatch screen (NASA)

The ISS usually appears over the western horizon and disappears over the eastern horizon in a matter of a few minutes. The best time to observe the Space Station is near dawn or dusk, when the viewer is in near-darkness and the passing Station continues to reflect light from the rising or setting Sun.

(Source: www.nasa.gov/missions/shuttle/f_skywatch.html)

Official SkyWatch web site: http://spaceflight.nasa.gov/realdata/sightings/. Visit to learn more about how to track the International Space Station and other satellites in the night sky. Want to know when a spacecraft will be flying over Budapest? Click on Sightings by City!

***Pille* in Space**—The Passive Dosimeter System (PDS) measures biologically active space radiation. The Hungarian Pille is a major component of PDS. Pille consists of dosimeters to accumulate dose and a reader to measure that dose on-orbit. The dosimeters are placed in various locations within ISS and exposed for specific durations. At the end of the exposure period, the dosimeters are placed in the reader, which heats them and measures the cumulative radiation exposure.
Read more about PDS at http://brp.arc.nasa.gov/GBL/Lab_Eqpmnt/measure.html.

In the photo: PDS system being used by Jim Voss on the International Space Station (NASA)

American English: **FYI**

In the title above, what does **FYI** stand for? It's *for your information.* Do you know some other common English abbreviations and acronyms?

- Probably the most common one is **OK**, meaning *all right*;
- The common **e.g.** in the written language means *for example* (from Latin "exempli gratia");
- **ASAP** (pronounced ay - ess - ay - pee) is a short version of *as soon as possible;*
- Found mainly as a title of a website section, an **FAQ** (pronounced ef - ay - kyu) contains answers to *Frequently Asked Questions;*
- Used often in e-mails, **BTW** means *by the way*;
- People who put **PTO** on some documents are asking you to "*please turn over*" the page.
- **HQ** stands for *headquarters*, a place from where a mission is commanded.

And can you decipher this **SMS** (*short message service*) message: **CUL8R**?

See you later!

How **DOES** That Work?

Ever wondered how inventions such as car engines, cell phones or microprocessors work? Check out **www.howstuffworks.com**

The editors explain not only how machines function but also the rules behind:

- sports such as **rock climbing**;
- natural phenomena such as **time**;
- institutions such as the **United Nations**;
- historical events such as **September 11, 2001**
- inventions such as the **GPS** system;
- constructions such as **roller coasters**;

Want more great websites on science? Check out the website for Scientific American (www.sciam.com) and click on "Science & Technology Web Awards." The page contains links to the magazine editors' 50 favorite links in 10 categories ranging from anthropology to physics.

Activity Page

Win a Book!

To take part in a drawing for a set of 3 large U.S. maps e-mail us the answer to the following question:

Who or what is Kitty Hawk?
a. an American aviator
b. a place in North Carolina
c. the first plane

Send your answer to:
zoom@usembassy.hu

Please state your name, address, and age.

The deadline is June 15.

Winners will be notified by the end of June.

Good **Luck**!

Who Invented **That**?

Match the names of inventors with their inventions. Then make sentences using the clues, e.g.: *Thomas Edison invented the modern light bulb.*

Jonas Salk	roll film and Kodak camera (devise)
Albert Szent-Györgyi	Ford's Model T (design, 1908)
George Eastman	vitamin C (discover, in the 1930s)
Joseph (József) Galamb	modern light bulb (invent)
Dennis (Dénes) Gábor	vaccine for polio (develop)
Thomas Edison	holography (invent, 1948)

1. _____
2. _____
3. _____
4. _____
5. _____

Now rewrite the sentences in the passive form, e.g.:
The modern light bulb <u>was invented</u> by Thomas Edison.

1. _____
2. _____
3. _____
4. _____
5. _____

Find Correct **Answers** at: www.usembassy.hu/zoom_key.htm

ZOOM in on america

Zoom is available online at
www.usembassy.hu/zoom.htm

Please send requests for subscription and comments to:
zoom@usembassy.hu

Regional English Language Office
Relobp@pd.state.gov

Information Resource Center
Infousabp@pd.state.gov

Mailing address:
U.S. Embassy
Public Affairs Section
1054 Budapest
Szabadság tér 12.

A **Little** Bit of Math?

The German physicist, Daniel Gabriel Fahrenheit (1686-1736), invented the first truly accurate thermometer using mercury. He also developed the first precise temperature scale. Americans use the Fahrenheit scale, unlike Europeans, who use Celsius. Here are formulas for converting the temperatures:

Celsius = (Fahrenheit - 32) x 5/9
Fahrenheit = Celsius x 9/5 + 32

Convert these record temperatures into Celsius:

- The **hottest** U.S. temperature ever recorded was **134 degrees Fahrenheit (… degrees Celsius)** at Death Valley, California, on July 10, 1913.
- The **coldest** U.S. temperature ever recorded was **-80 degrees Fahrenheit (… degrees Celsius)** at Prospect Creek, Alaska, on January 23, 1971.

Hint: Want to do it the easy way? Visit: www.wbuf.noaa.gov/tempfc.htm

What Are **These**? **Can you recognize these objects?**

Photo: Library of Congress

Photo: Montana State Univ.

Hint: See the list of inventors at the top of the page!

Photo: U.S. National Park Service