

**Progetto ERASMUS  
PLUS - EXACTLY  
EXACT!**

Mars

---

ANTONELLA • JANUARY 30, 2017

---

# How can we find out more about Mars?

Mars and Earth

## 8. How Can We Find Out More About Mars?

**Overview**

Participants use a variety of resources to try to find answers to their questions. Then they hold a science conference to share their findings.

**TIME:**

- 1 hour or more for research
- 1 hour for the science conference

<b>Big Ideas</b>	<b>Connections</b>
<ul style="list-style-type: none"><li>• Scientists do research and tap into sources of established knowledge.</li><li>• They compare their thinking to established knowledge.</li><li>• Scientists communicate what they have learned and which questions still remain open.</li></ul>	<p>Participants explore resources to find out what is known about Mars and hold a science conference to share their new information.</p>

**Materials**

**For the group:**

- Chart labeled "Our Questions About Mars" (generated in Activity 7)
- A variety of books, videos, and CD-ROMs about Mars (See Resources on page 35 for a detailed list of suggestions)
- Access to computers, if possible
- Chart paper and markers

**For each participant:**

- 1 science journal

**Preparation**

1. Read over the five options for research presented in the activity and decide which ones to use with your group.
2. Gather together a variety of resources about Mars suitable to your group's age and ability level.
3. If possible, arrange a time for participants to have access to the internet.
4. Hang up the chart called "Our Questions About Mars".

**29**

ANTONELLA  
FEBRUARY  
17, 2017

## 'The Planets -- Investigating Our Planetary Family Tree: A Family Affair' from the #NASA\_App



---

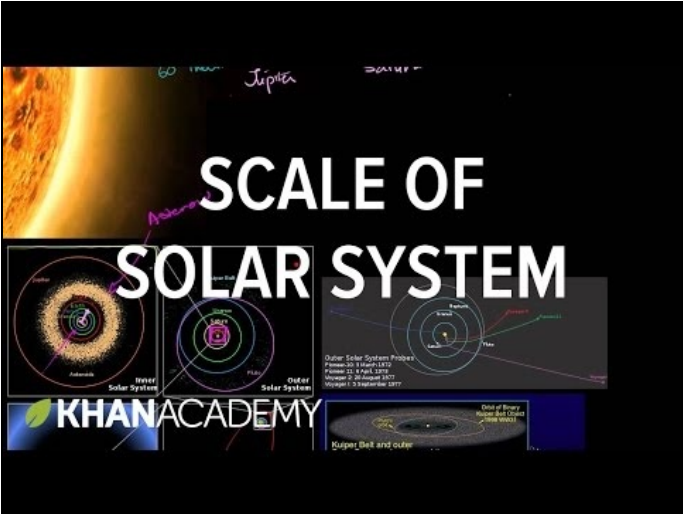
ANTONELLA  
FEBRUARY  
19, 2017



ANTONELLA  
FEBRUARY  
19, 2017

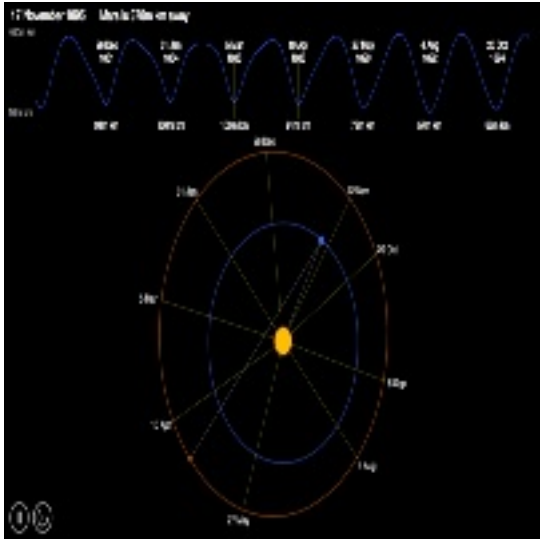


ANTONELLA  
FEBRUARY  
19, 2017



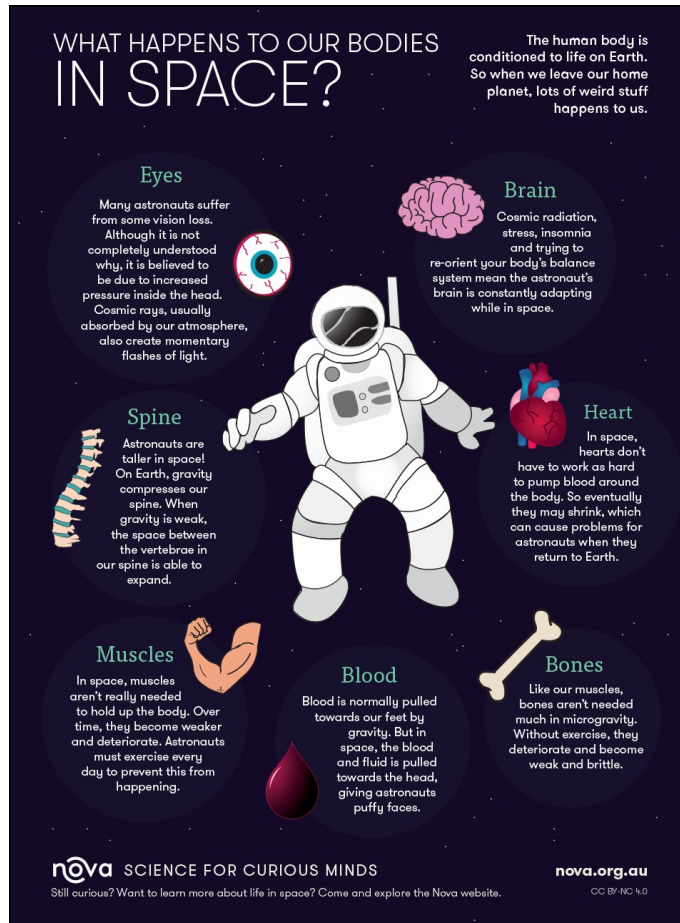
ANTONELLA  
FEBRUARY  
19, 2017

# Distance between Earth and Mars




# WHAT HAPPENS TO OUR BODIES IN SPACE?

The human body is conditioned to life on Earth. So when we leave our home planet, lots of weird stuff happens to us.




### Eyes

Many astronauts suffer from some vision loss. Although it is not completely understood why, it is believed to be due to increased pressure inside the head. Cosmic rays, usually absorbed by our atmosphere, also create momentary flashes of light.




### Brain

Cosmic radiation, stress, insomnia and trying to re-orient your body's balance system mean the astronaut's brain is constantly adapting while in space.




### Heart

In space, hearts don't have to work as hard to pump blood around the body. So eventually they may shrink, which can cause problems for astronauts when they return to Earth.




### Spine

Astronauts are taller in space! On Earth, gravity compresses our spine. When gravity is weak, the space between the vertebrae in our spine is able to expand.




### Muscles

In space, muscles aren't really needed to hold up the body. Over time, they become weaker and deteriorate. Astronauts must exercise every day to prevent this from happening.




### Blood

Blood is normally pulled towards our feet by gravity. But in space, the blood and fluid is pulled towards the head, giving astronauts puffy faces.



### Bones

Like our muscles, bones aren't needed much in microgravity. Without exercise, they deteriorate and become weak and brittle.



**nova** SCIENCE FOR CURIOUS MINDS

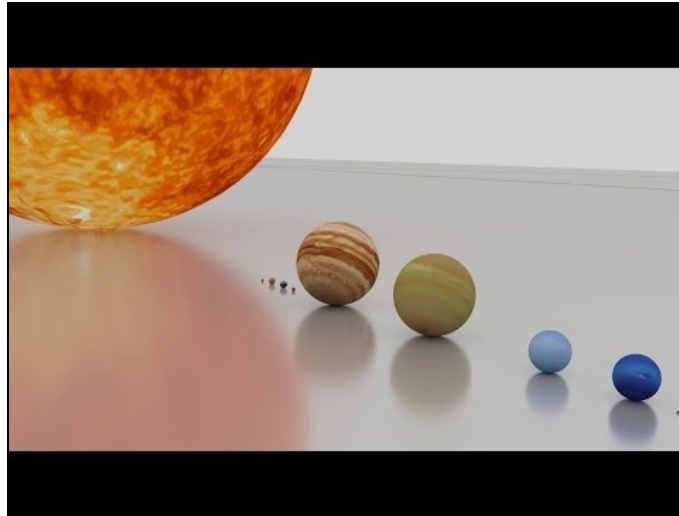
Still curious? Want to learn more about life in space? Come and explore the Nova website.

[nova.org.au](http://nova.org.au)

CC BY-NC 4.0

ANTONELLA  
FEBRUARY  
06, 2017

## How big is the Solar System?



---

ANTONELLA  
FEBRUARY  
06, 2017

## Presentazione sul sistema solare



ANTONELLA  
FEBRUARY  
06, 2017

## Articolo interessante

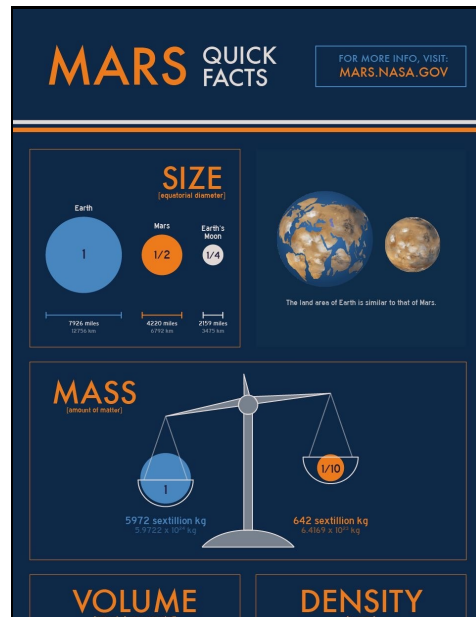


ANTONELLA  
FEBRUARY  
06, 2017

ANTONELLA  
FEBRUARY  
13, 2017

## Fun Facts about Mars!

ANTONELLA  
JANUARY 30,  
2017





Mars has about 15% of Earth's volume. To fill Earth's volume, it would take over 6 Mars volumes.



260 billion mi<sup>3</sup> 39 billion mi<sup>3</sup>  
1.1 trillion km<sup>3</sup> 10.3 billion km<sup>3</sup>

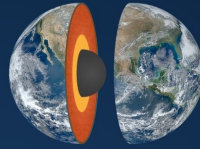


Mars is about 71% as dense as Earth.

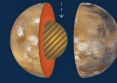
5.5 g/cm<sup>3</sup> 3.9 g/cm<sup>3</sup>



## STRUCTURE



Scientists are not yet certain if the core of Mars is solid, liquid, or in two distinct layers like Earth's. Future measurements will tell us more.



Crust Mantle Liquid Outer Core Solid Core

## DISTANCE

(average distance from orbit path to the Sun)



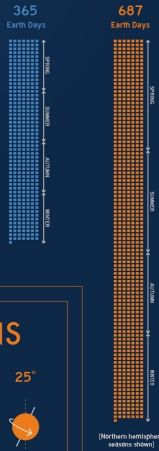
## SPEED

(velocity relative to the Sun)



## YEAR

(approximately)



## DAY

(approximately)



## TILT / SEASONS

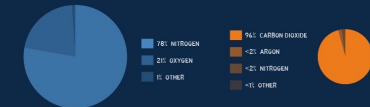
(approximate tilt)



## ATMOSPHERE

(characteristics and approximate composition)

OVER 100 TIMES DENSER THAN MARS' ATMOSPHERE



## TEMPERATURE

(approximate average and high/low ranges)



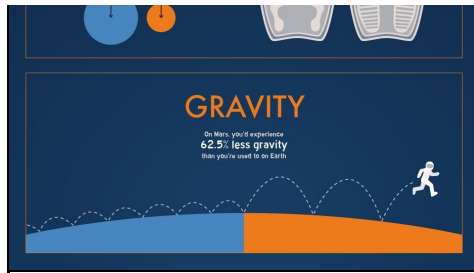
## WEIGHT

(effect of gravity on matter)

Weight is a measure of gravity's effect on mass. It varies based on factors like your mass, the planet's gravity, and the distance between you and the planet's center.

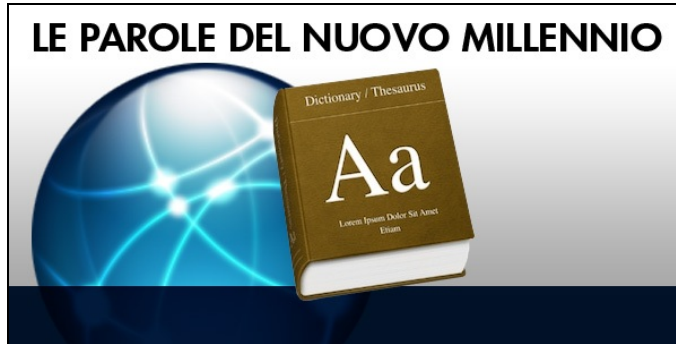
If you weighed 100 lbs on Earth, you would weigh only 38 lbs on Mars!





---

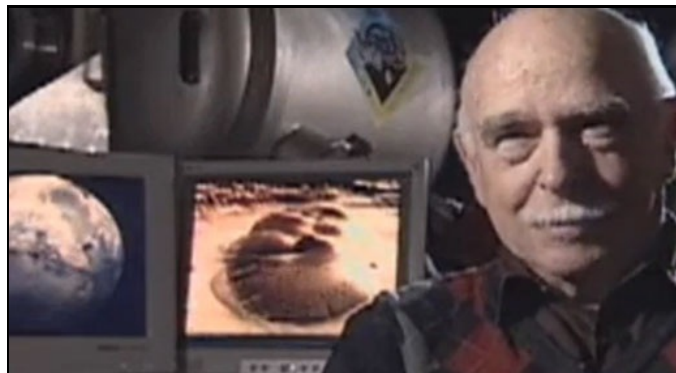
ANTONELLA  
FEBRUARY  
06, 2017



---

ANTONELLA  
FEBRUARY  
06, 2017

## I piedi in Terra e la testa su Marte



ANTONELLA  
FEBRUARY  
06, 2017



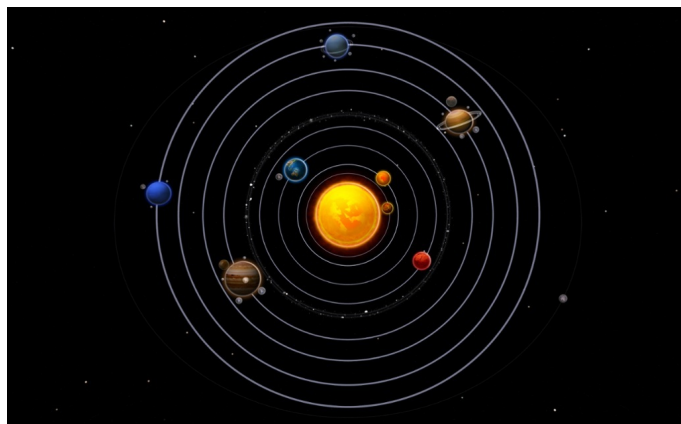
---

ANTONELLA  
FEBRUARY  
02, 2017

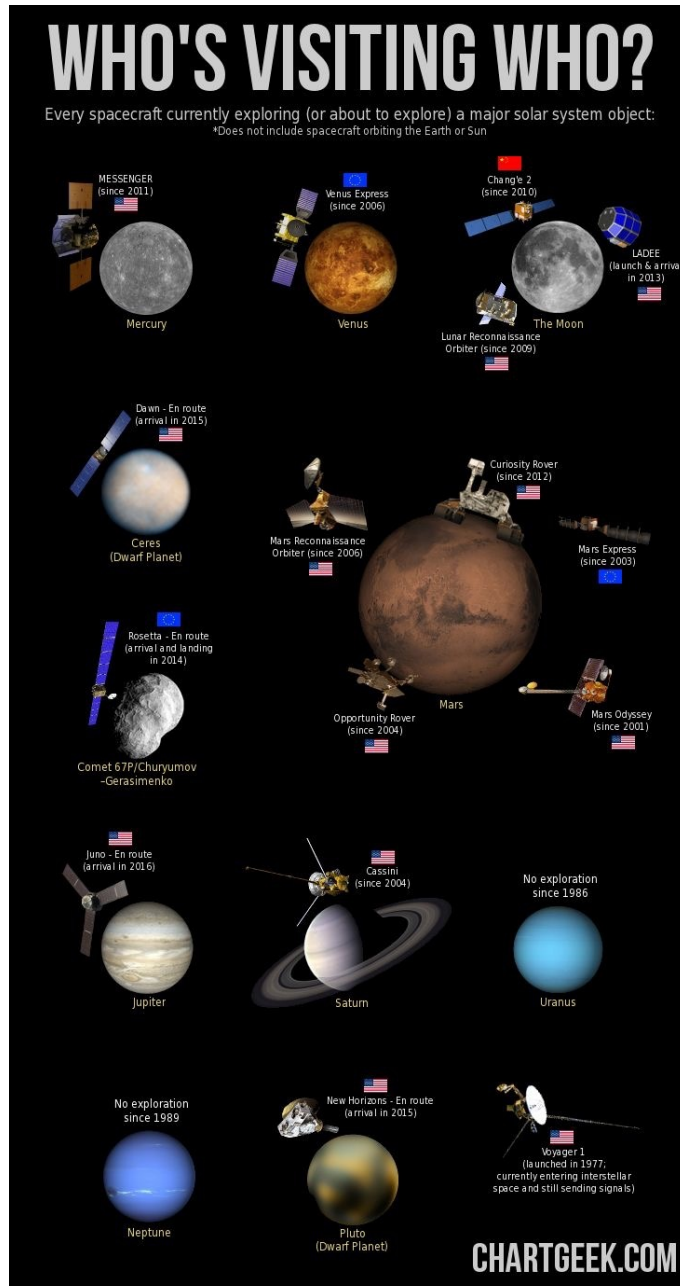
## ThingLink on MARS



ANTONELLA  
JANUARY 30,  
2017



ANTONELLA  
JANUARY 30,  
2017



ANTONELLA  
JANUARY 30,  
2017



---

ANTONELLA  
JANUARY 30,  
2017



# LIVING ON MARS

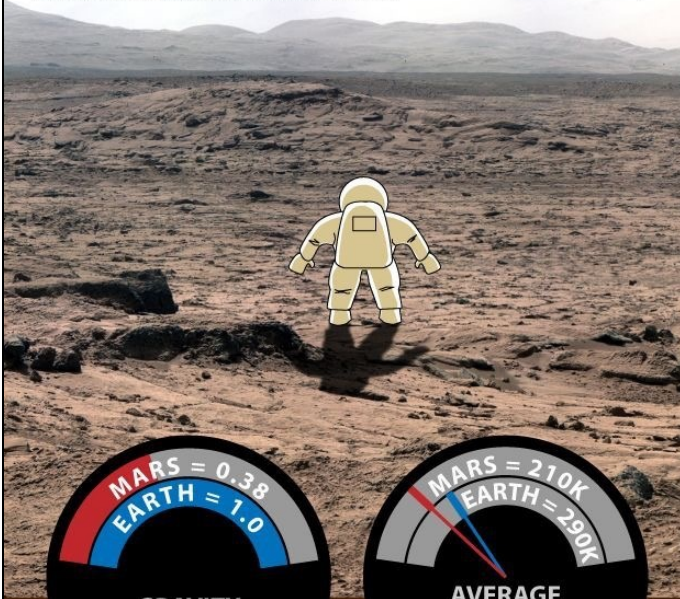
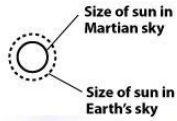
With half the diameter of Earth, Mars has much lighter gravity and a much thinner atmosphere. Humans cannot survive unaided on its surface.



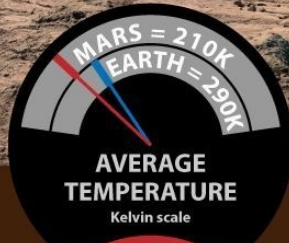
CREDIT: NASA

## HABITABLE? NO

Mars' air is about 1 percent the density of Earth's, and is composed of more than 95 percent carbon dioxide. Lacking a magnetic field like Earth's, Mars cannot deflect harmful radiation that comes from space.



GRAVITY



AVERAGE TEMPERATURE  
Kelvin scale



LENGTH OF DAY



LENGTH OF YEAR

Mars has two tiny potato-shaped moons, Phobos and Deimos. They are 14 miles (22.5 kilometers) and 8 miles (13 km) across, respectively.

SOURCE: NASA, JET PROPULSION LABORATORY

KARL TATE / © Space.com

