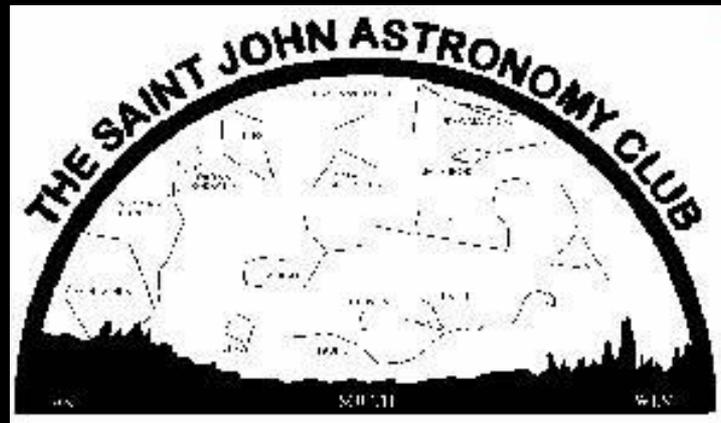


# Welcome



To the  
SJAC  
February  
Meeting



# The Moon



Moon Photos By Mike Powell

# What do we know about the Moon?

- What is it?
- Where did it come from?
- How old is it?
- What is its Orbital Period?
- What is an Eclipse?
- Is there a Dark Side?
- What are the marks on it?
- What is a “Blue Moon”?
- Were we really there?
- Will Man go back?



# What is the Moon Made of?

There's an old saying that the moon is made of green cheese.

Scientists have learned a lot about the moon in the last fifty years.

We've even traveled to the moon and collected a sample of some of that green cheese. You know what they found? It's made **Rock!!!**

Mostly magnesium, iron, calcium, basalt and aluminum.



# Where did the Moon Come From?



## Giant Impact Theory:

This Theory proposes that the Moon was created when a Mars sized object collided with the infant Earth and ejected enough debris into orbit to form the Moon.

## The Capture Theory:

This theory proposes that the Moon was formed somewhere else in the solar system, and was later captured by the gravitational field of the Earth.

# How old is the Moon?

The age is approximate and is constantly being adjusted, but is usually thought to be the same age as the Earth, about 4 1/4 billion years.

( This is from a 2009 study.)



# What is it's Orbital Period?



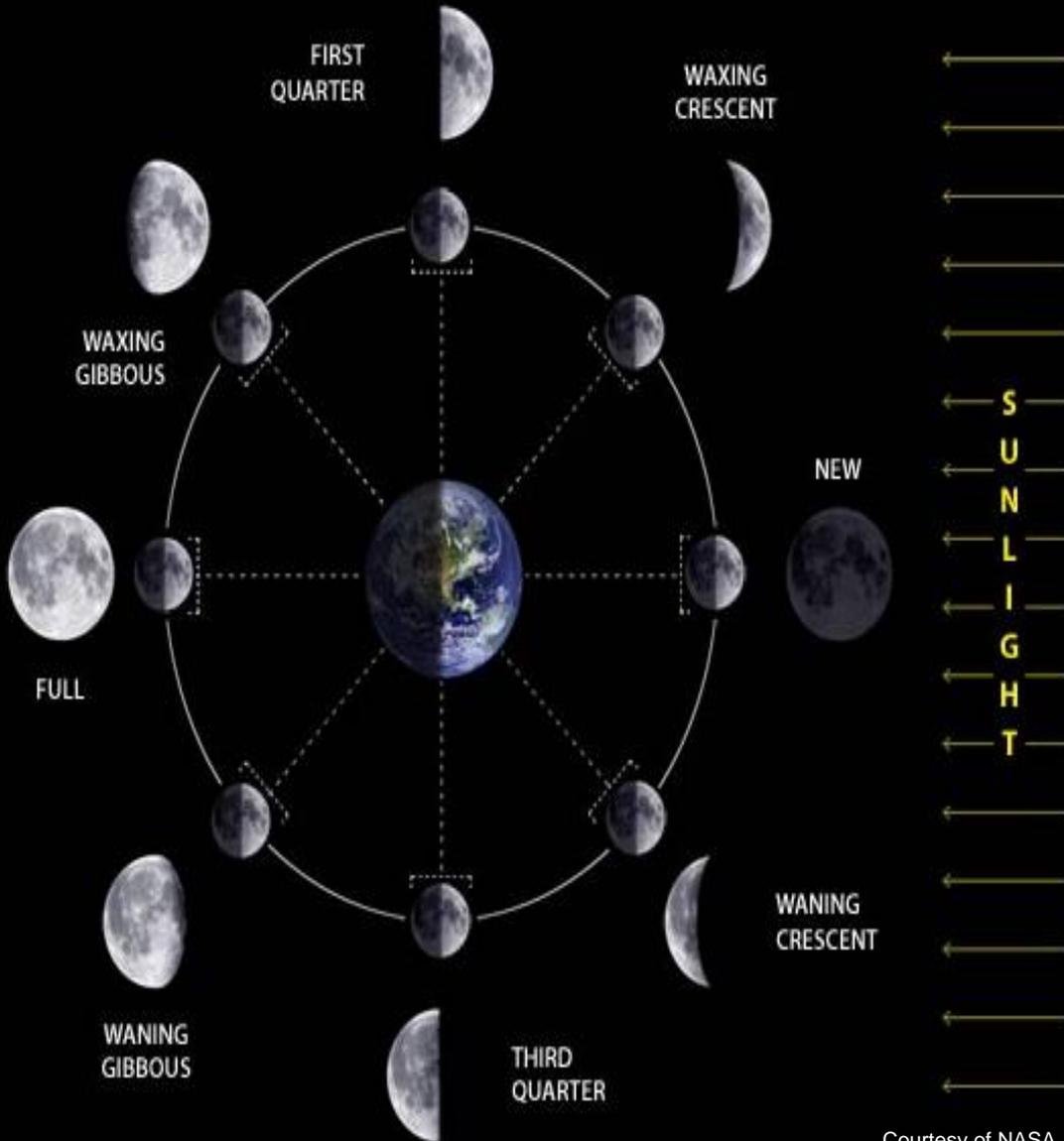
The Moon's orbital period is 27.322 days. Because of this motion, the Moon appears to move about  $13^\circ$  against the stars each day, or about half of a degree per hour.



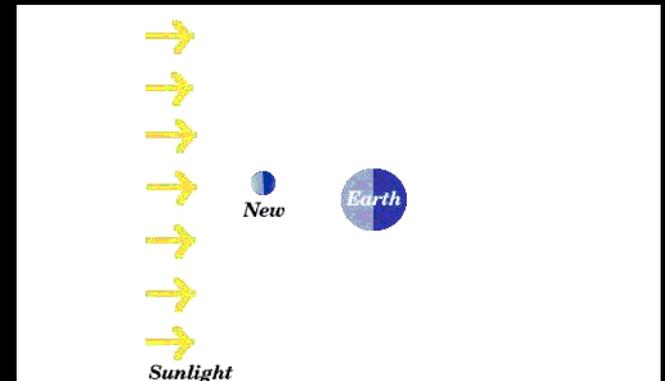
The changing position of the Moon with respect to the Sun leads to lunar phases.

# Phases

A lunar phase or phase of the moon refers to the appearance of the illuminated portion of the Moon as seen by an observer on Earth



Courtesy of NASA

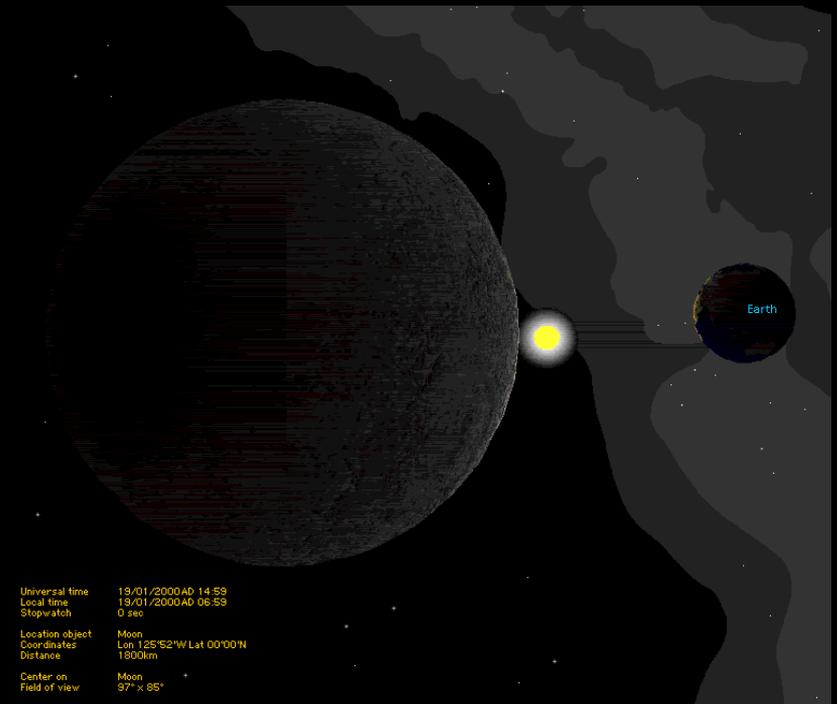
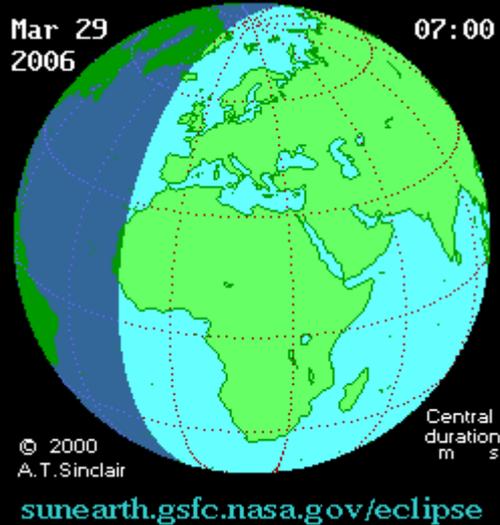


# What is an Eclipse?

2 Types

Solar

Lunar Eclipse



As seen from the direction of the Sun

As seen from the direction of the Moon

# Is there a Dark Side?



The side of the Moon that faces Earth is called the near side, and the opposite side the far side.

The far side is often inaccurately called the "dark side," but in fact, it is illuminated exactly as often as the near side: once per lunar day



What are the marks on the surface?

# Seas or Mares

Mare Serenitatis

Sea of Serenity

Mare Crisium

Sea of Crises

Mare Tranquillitatis

Sea of Tranquillity

Mare Fecunditatis

Sea of Fertility

Maria are large, dark, basaltic plains believed to be formed by ancient volcanic eruptions.

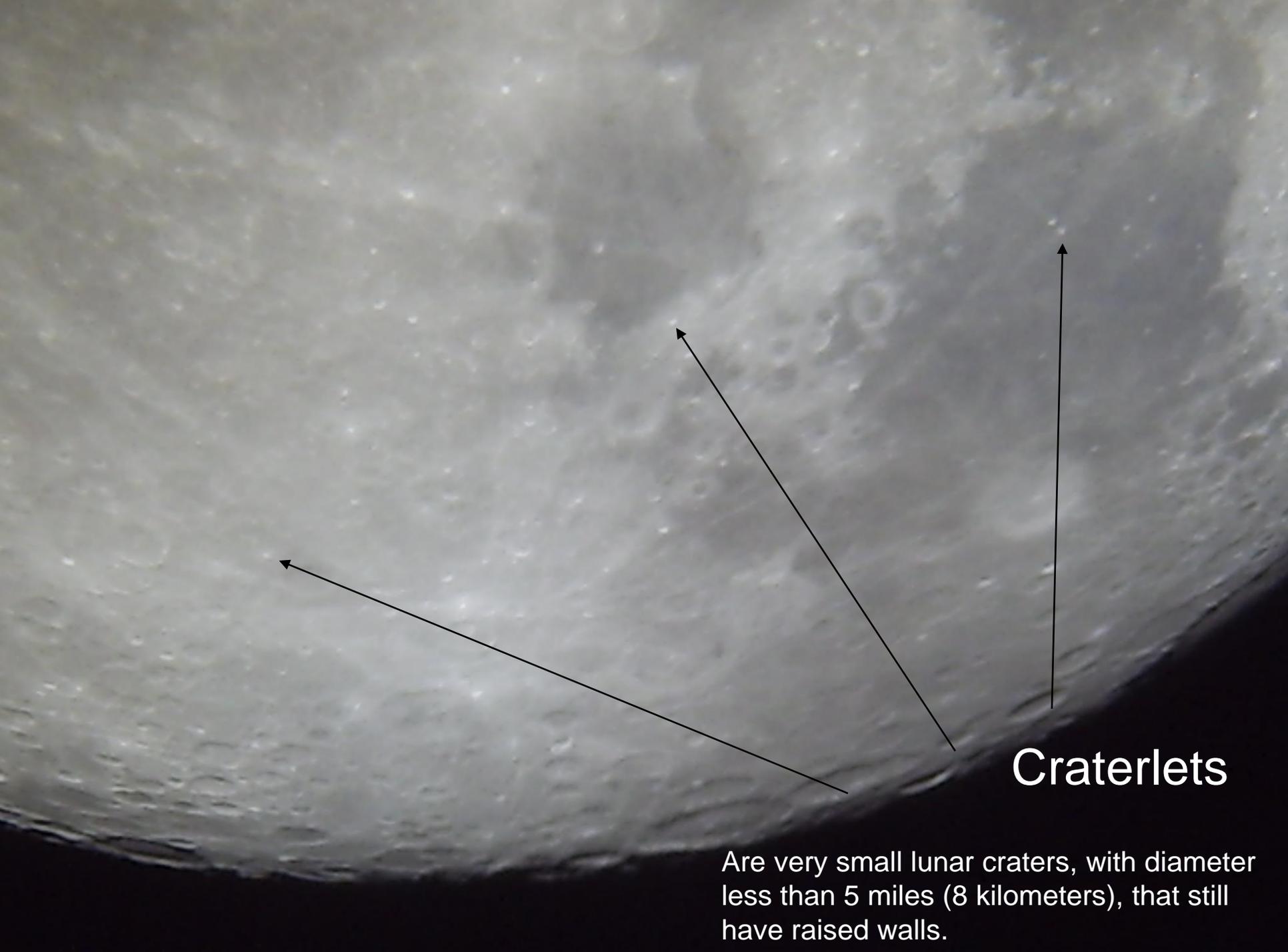


# Impact Craters

Impact craters are the remains of collisions with asteroids, comets, or meteorites with the Moon.

These objects hit the Moon at a wide range of speeds, but average about 12 miles per second or 43,000mph



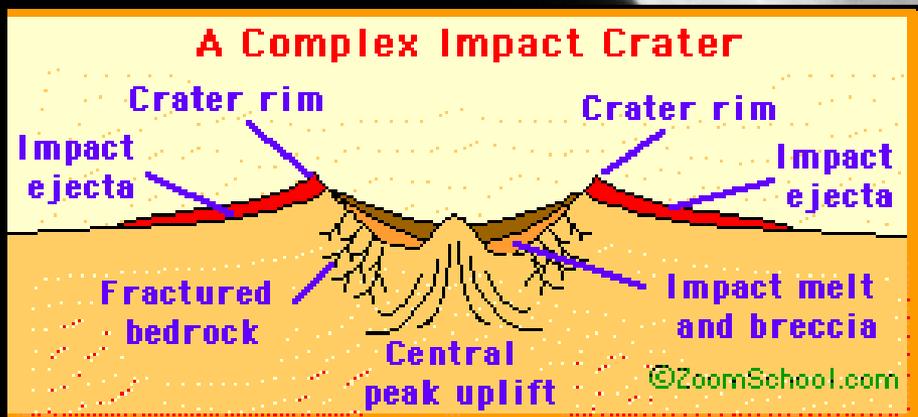
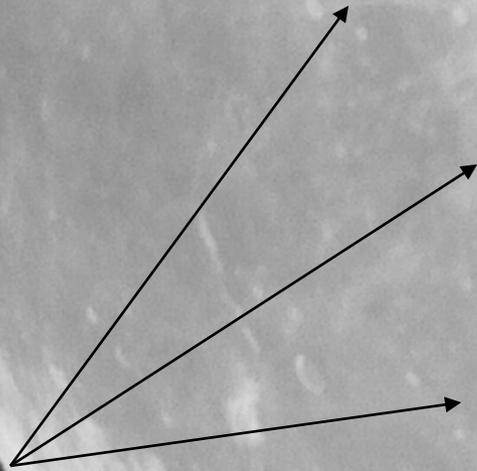


# Craterlets

Are very small lunar craters, with diameter less than 5 miles (8 kilometers), that still have raised walls.

# Crater Ejecta

Material ejected from impact basins is distributed over wide areas.



# What is a “BLUE MOON?”

Most years have twelve full moons which occur approximately monthly, but in addition to those twelve full lunar cycles, each solar calendar year contains an excess of roughly eleven days compared to the lunar year.

The extra days accumulate, so every two or three years (7 times in the 19-year cycle), there is an extra full moon. The extra moon is called a "blue moon."

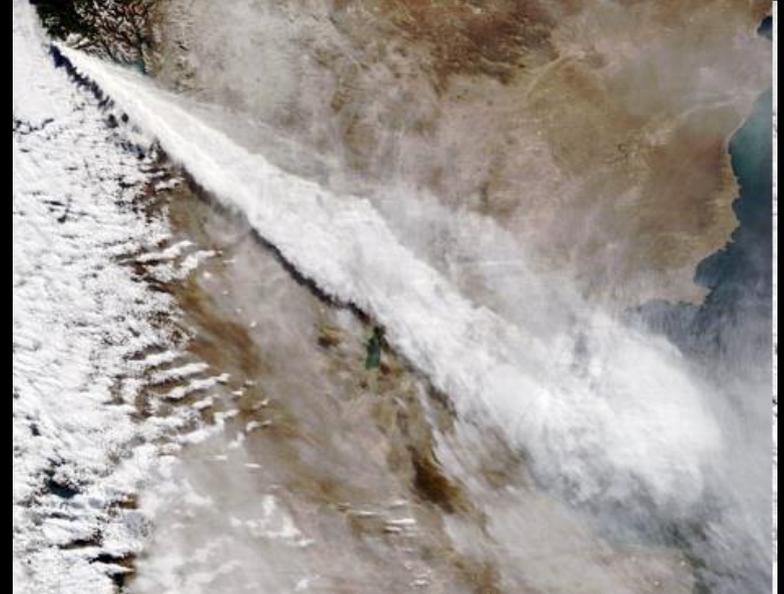


Last Blue Moon – Dec 31 2009



A Blue Moon can also be caused by atmospheric conditions such as Smoke or Volcanic dust in the air.

The particles of dust absorb light causing the moon to look Blue.

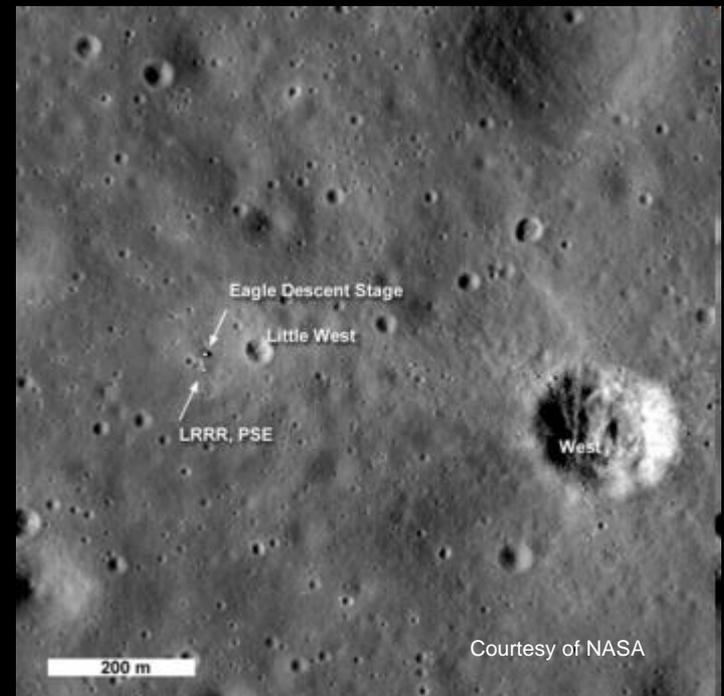


# Were we really there ???

In 1969 man first landed on the moon.

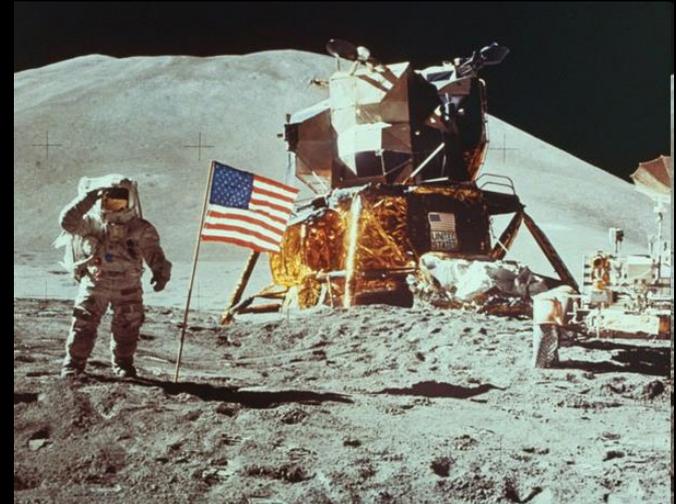
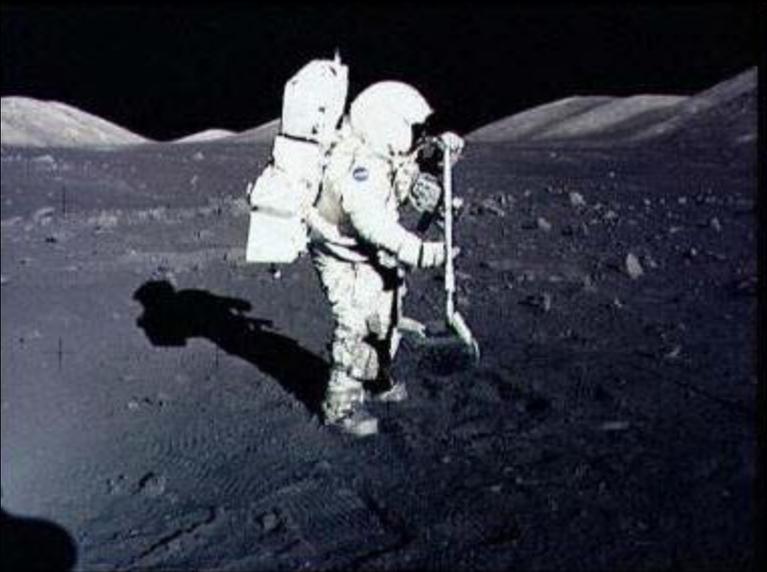
In 2009 the Lunar Reconnaissance Orbiter took pictures of the Apollo 11 landing site.

The Moon Landings were not fake!



# Will Man go back?

NASA unveiled plans to return humans to the moon by 2018. Astronauts are expected to travel in a new spaceship that combines technologies developed for the Space Shuttle and Apollo programs.



# Photographs of the Moon













Remember, the moon is  
always a spectacular  
object to Photograph or  
View through a  
telescope.



# The End



Thank You