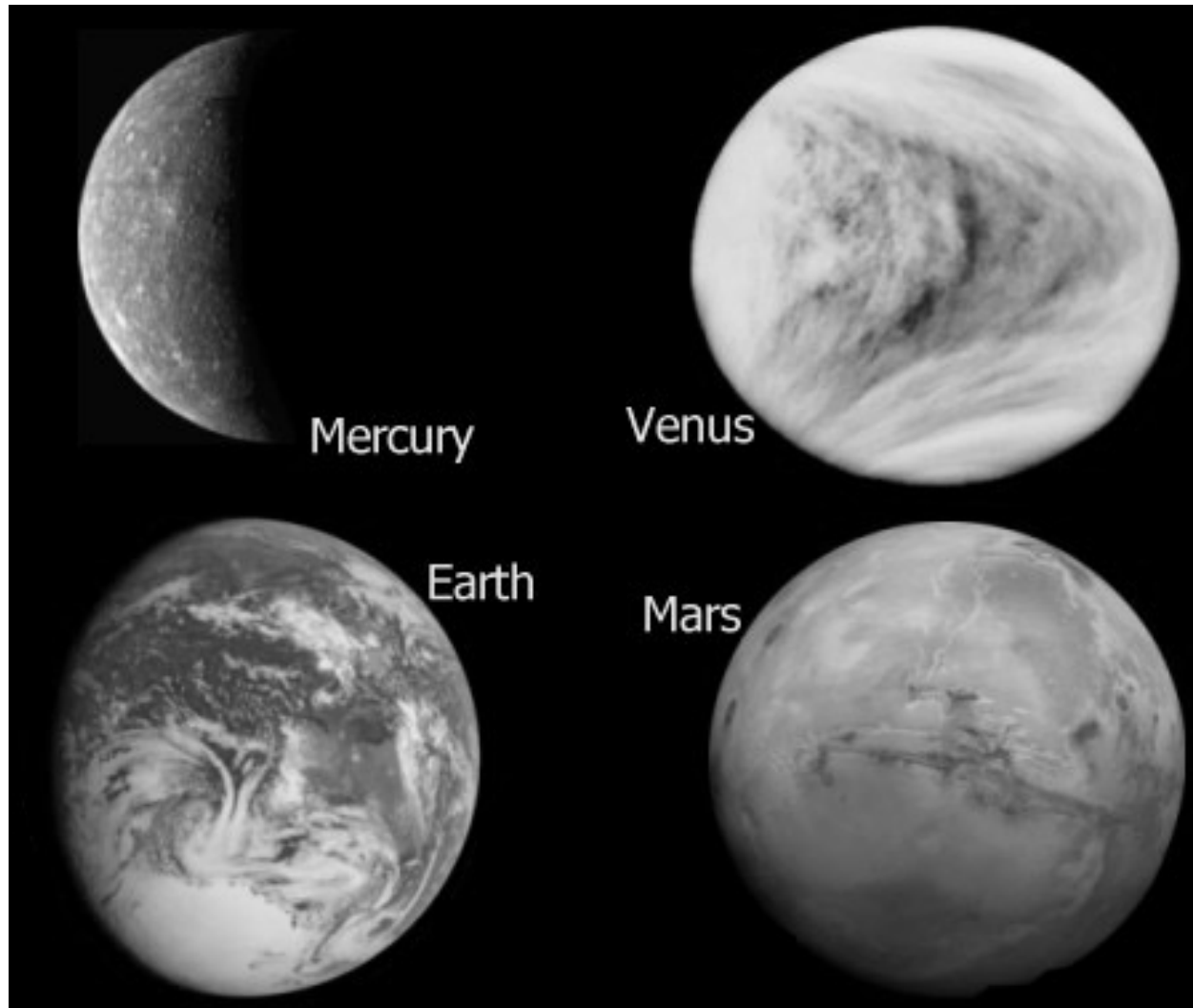


The Inner Planets

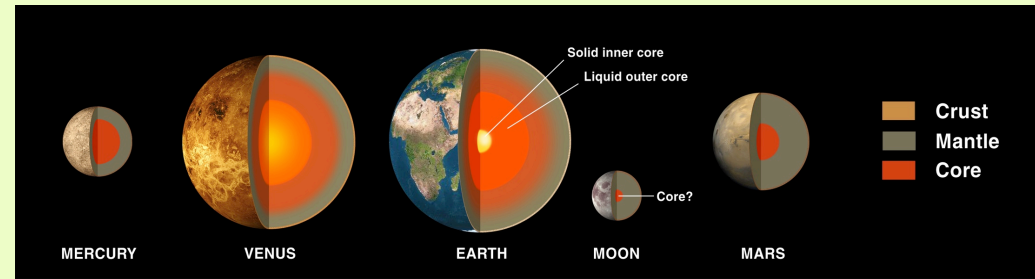


The Inner Planets

Terrestrial Planets

Mercury, Venus, Earth and Mars

- Rocky Surfaces
- No rings
- No or Few Moons



Jovian Planets

Jupiter, Saturn, Uranus and Neptune

Gas Surfaces
rings
Many Moons



**Mercury - is
heavily cratered,
like the Moon.
The Sun is 10 times
brighter than on
Earth
Smallest of the
Terrestrial
Planets**

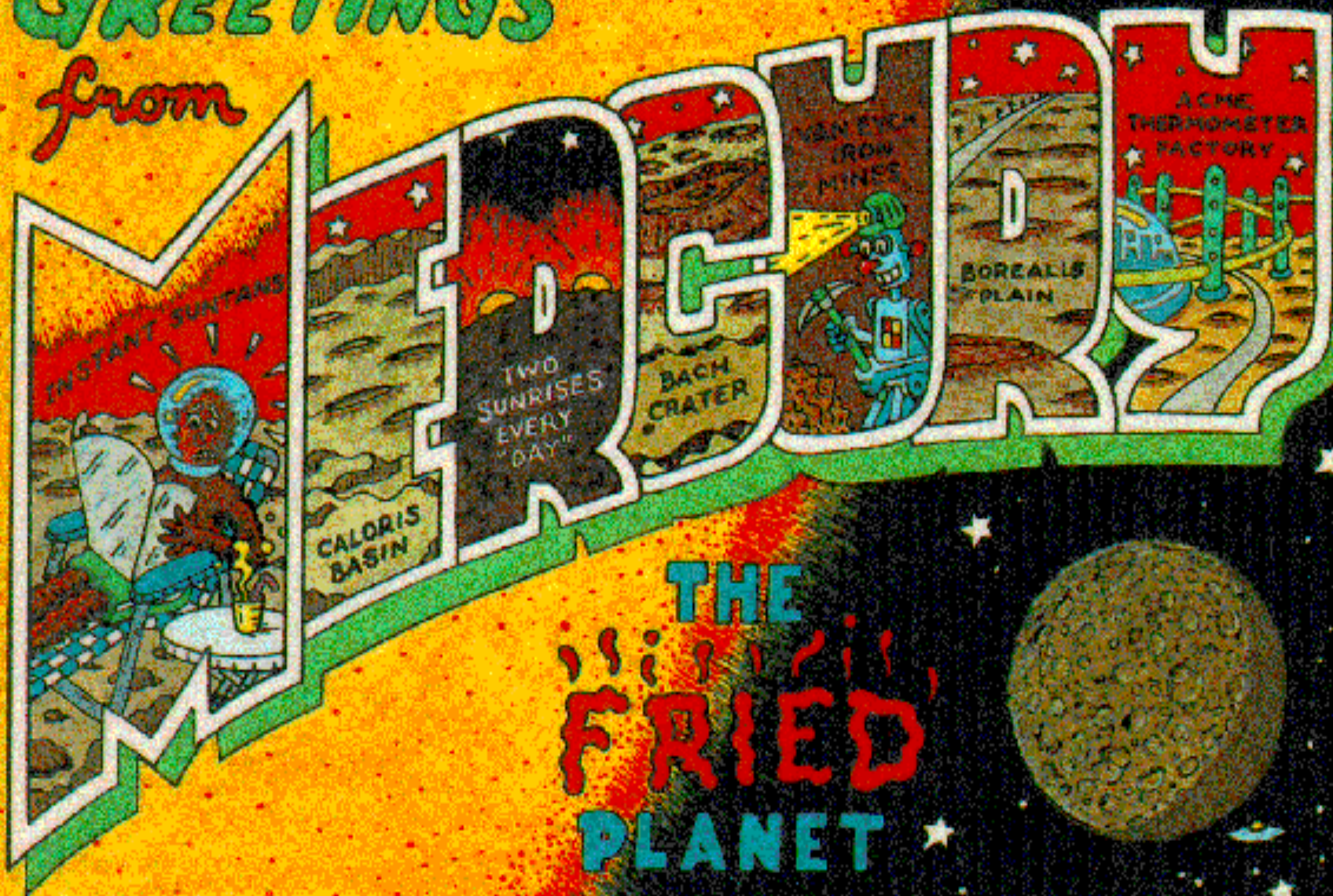


The “winged-foot” messenger of the gods.

First Telescopically Observed by By Galileo in 1609

GREETINGS

from



THE
FRIED
PLANET



Mercury

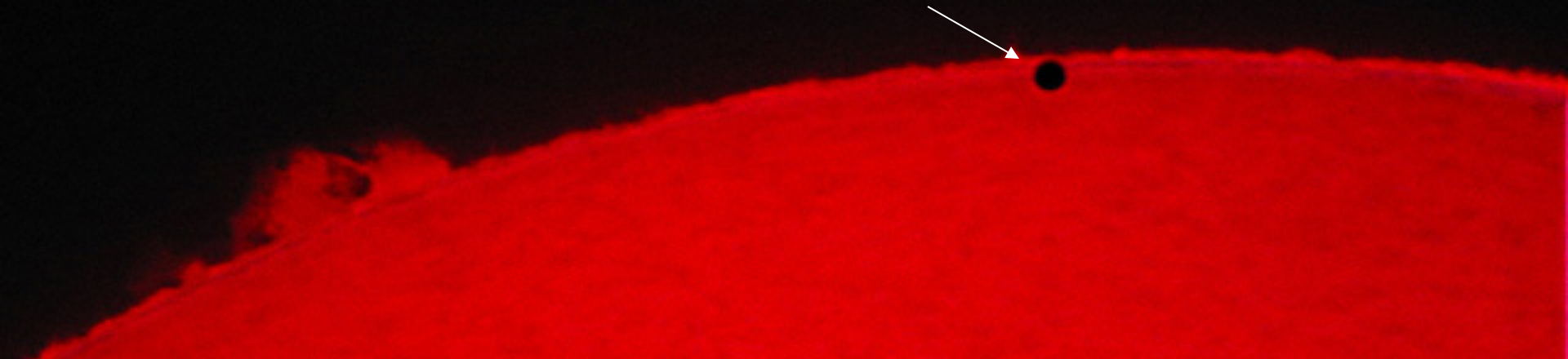
**Moon with
Earthshine**

PLANET DATA

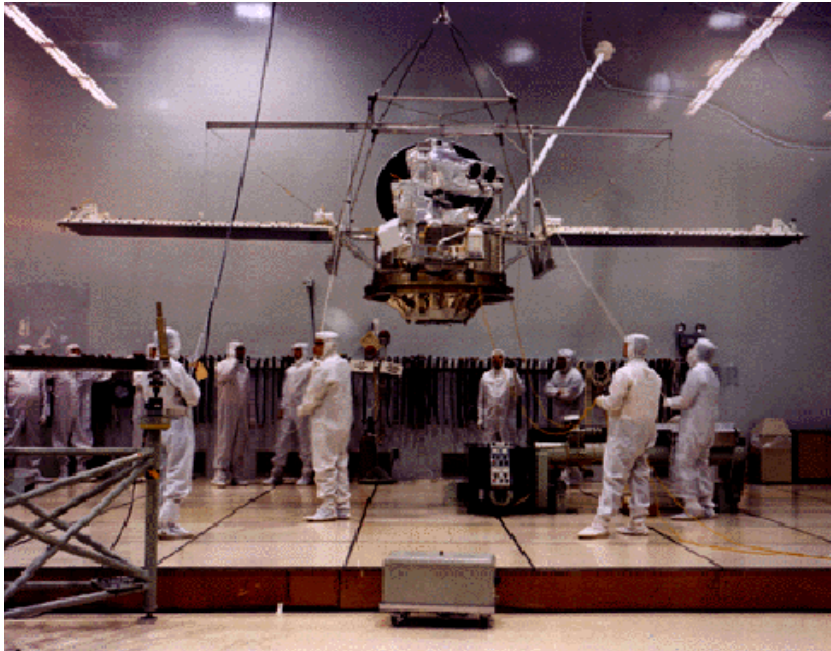
Planet	Period of Rotation (Earth Days)	Average Distance from sun AU)	Period of Revolution (Earth days)	Number of Moons
<u>Mercury</u>	<u>176 days</u>	<u>.39</u>	<u>88 days</u>	<u>0</u>
Venus				
Earth	1 day	1 AU	365.25 days	1
Mars				
Jupiter				
Saturn				
Uranus				
Neptune				

Smallest of the Terrestrial Planets

Mercury transits the Sun



First visited by **Mariner 10, 1974**



Bright Rayed Craters

What is the surface like?

Mercury is heavily cratered, like the Moon.

**The Sun is 10 times
brighter than on Earth**

Venus



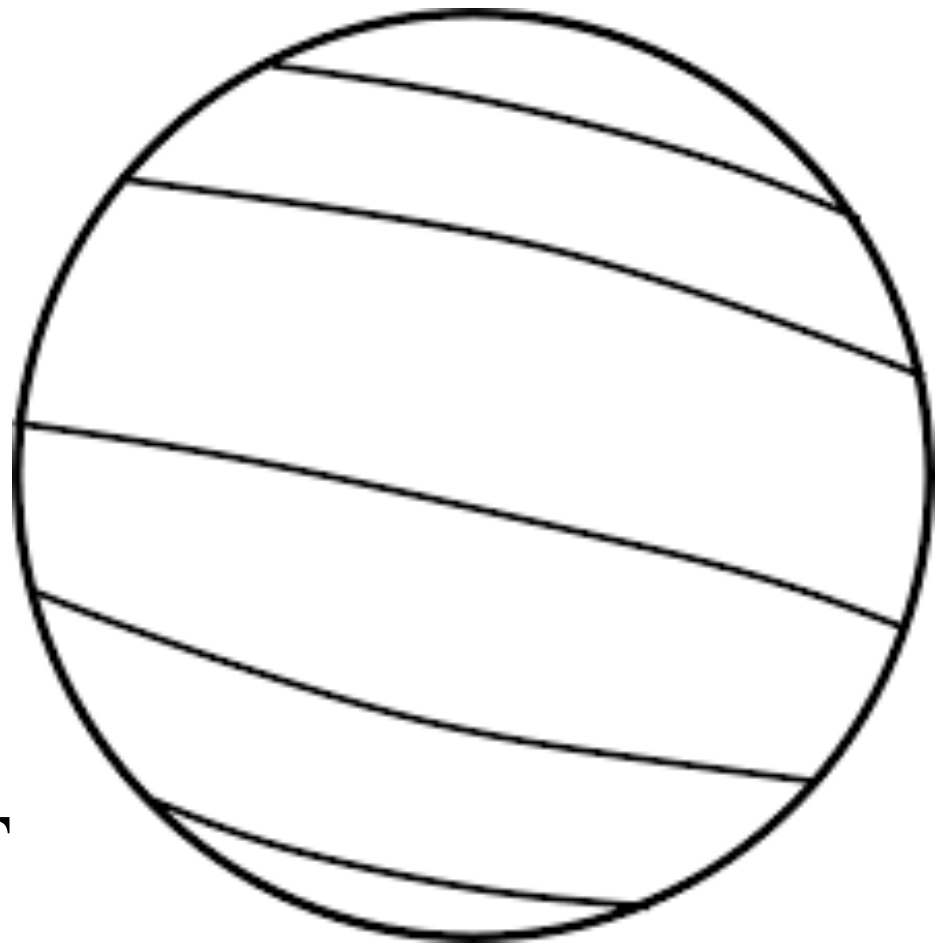
The goddess of love



VENUS

**First telescopically
observed by Galileo in
1609**

- **Called “Earth’s
Twin” Daytime
temperature: + 900°F**
- **Night time
Temperature: + 850°F**



**Thick CO₂
Clouds made mostly of
sulfuric acid
Highly reflective light**

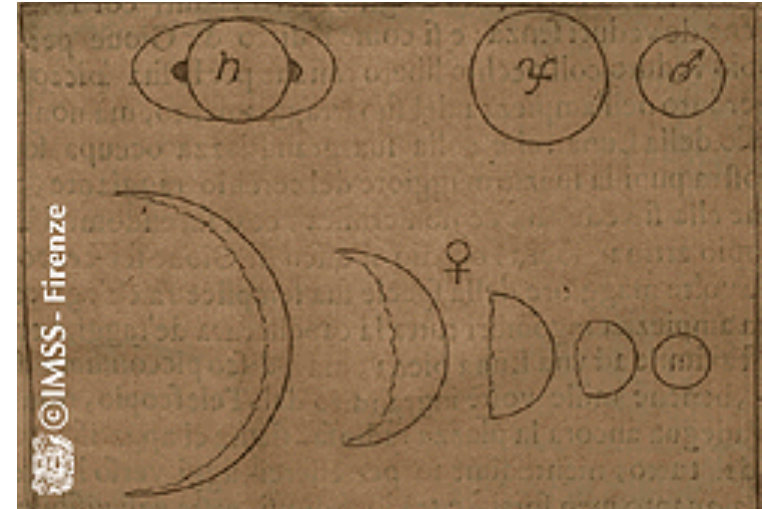
Venus - Our “Sister” Planet

- Until 1950 scientists believed Venus was covered with

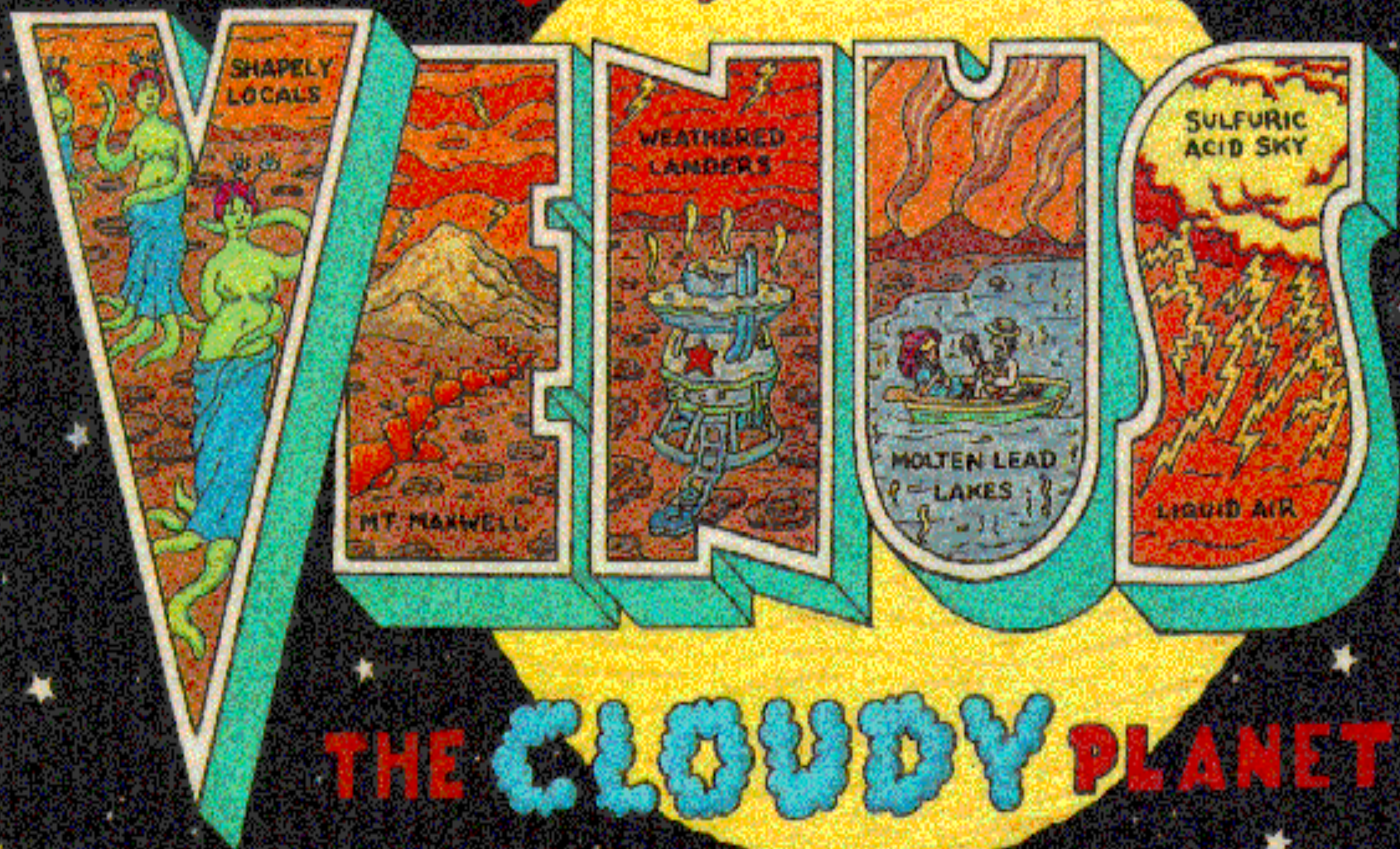
Rain Forests

and possibly inhabited by

**Photosynthetic, Alien,
Human-like, Life forms**



Greetings from



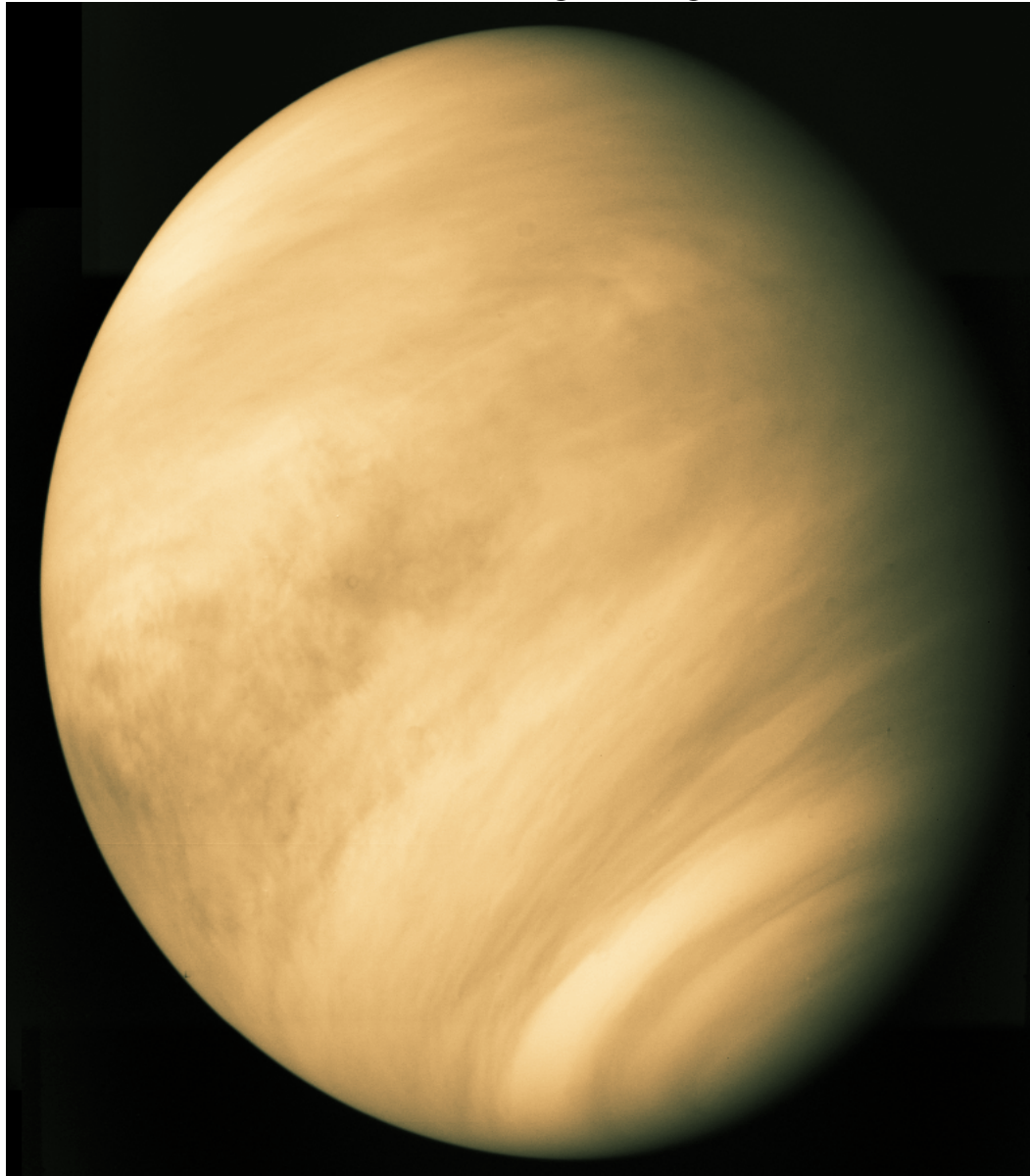
PLANET DATA

Planet	Period of Rotation (Earth Days)	Average Distance from sun (AU)	Period of Revolution (Earth Years)	Number of Moons
Mercury	176 days	.39	88 days	0
<u>Venus</u>	<u>243 days</u>	<u>.72</u>	<u>225 days</u>	<u>0</u>
Earth	1 day	1	365.25 days	1
Mars				
Jupiter				
Saturn				
Uranus				
Neptune				

View from Venera 14



Mariner 10 Flyby in 1974



Facts about Venus

- Called “Earth’s Twin” (similar in size, mass, density)
- In 1970, Russia sent a probe, “Venera 7” after it landed, it lasted only 23 min – due to the sulfuric acid atmosphere.
- Venera 7 was the first of 20 Russian missions.
- Daytime temperature: + 900 °F
- Night time Temperature: + 850 °F

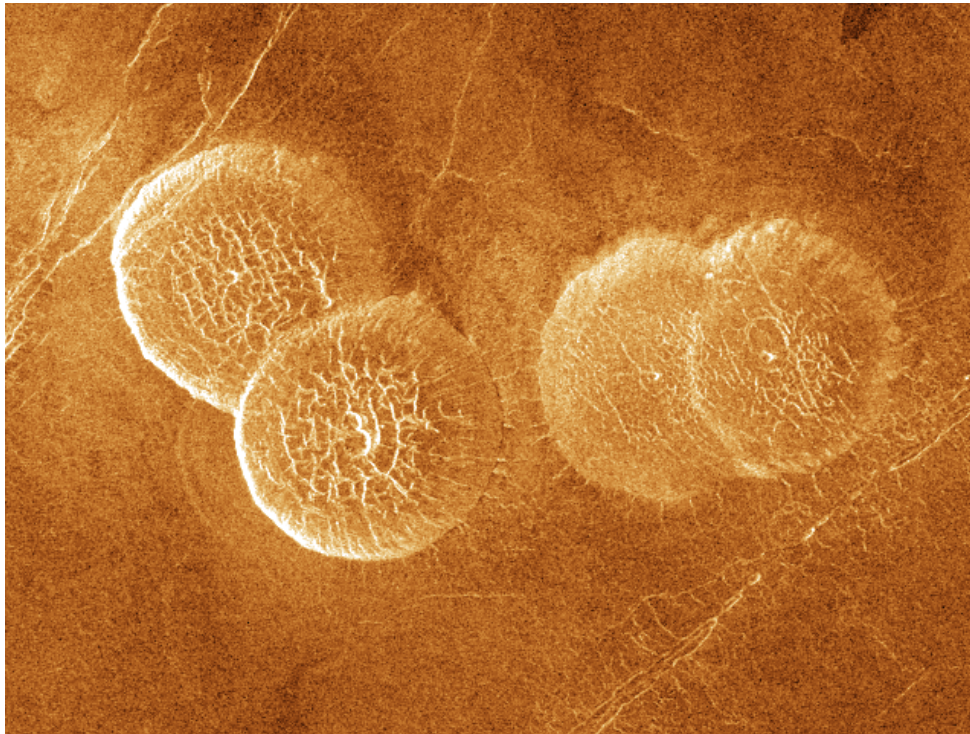
The Atmosphere of Venus

- Thick CO₂
- Clouds made mostly of sulfuric acid
- Highly reflective light

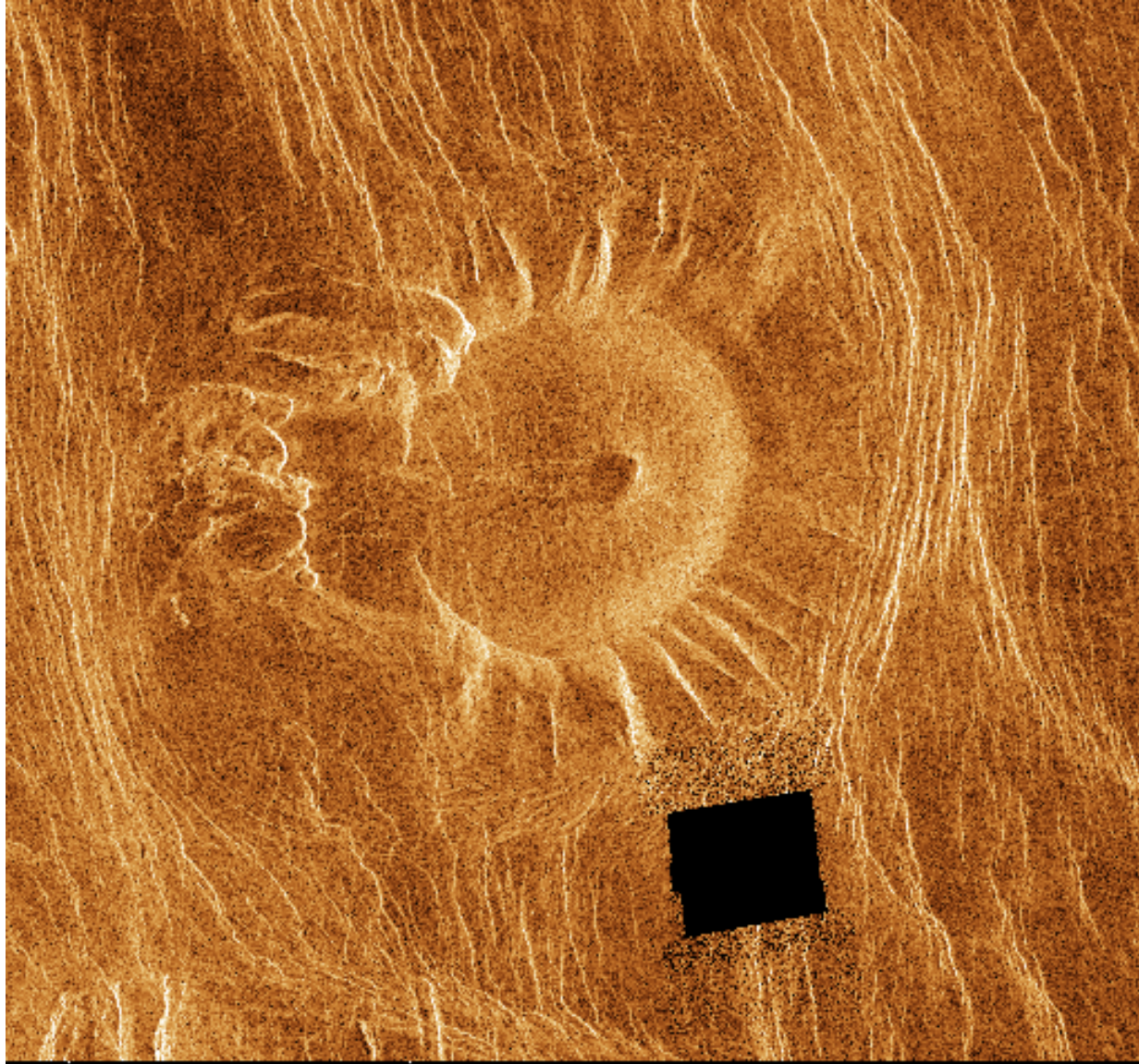
Volcanoes

**Volcanoes are a common terrain
feature: None in chains,
suggesting no plate tectonics**

Pancake Domes



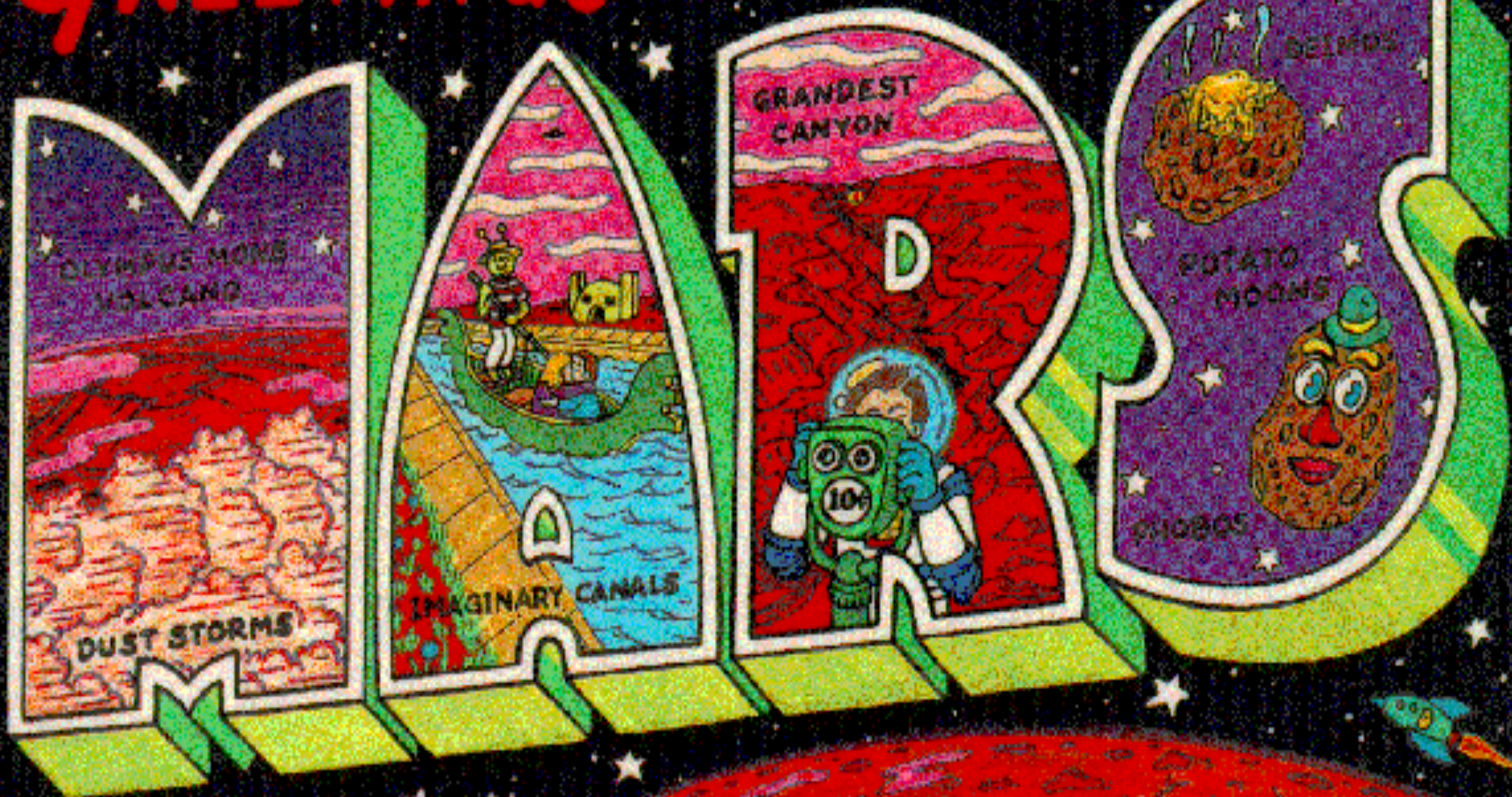
The “Tick”



Mars

The god of War

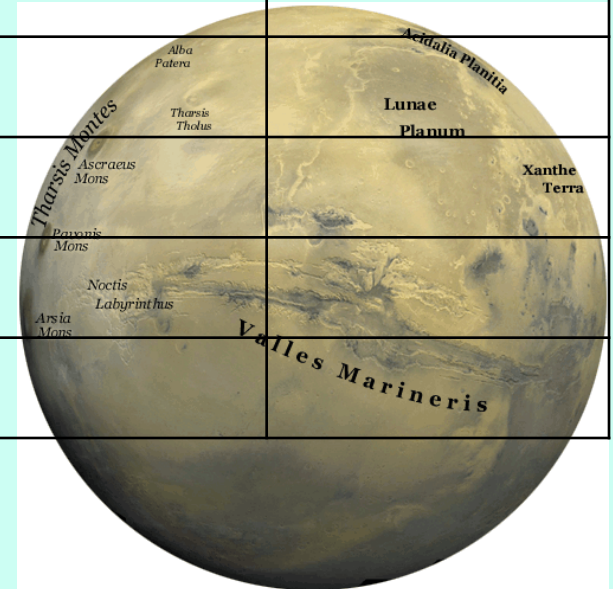
GREETINGS FROM



THE RED PLANET

The Planet Mars

Planet	Period of Rotation (Earth Days)	Average Distance from sun (AU)	Period of Revolution (Earth Years)	Number of Moons
Mercury	176 days	.39	88 days	0
Venus	243 days	.72	225 days	0
Earth	1 day/24 hour	1	365.25 days	1
Mars	25 hours	1.5 AU	694 days	2
Jupiter				
Saturn				
Uranus				
Neptune				



The Martian Record Book:

- **Mars has the most observable surface features**
 - The Largest Volcano in the solar system:
Olympus Mons
 - The Largest Canyon in the solar system:
Valles Marineris
 - The Largest impact basin in the solar system:
Hellas Basin

- Mars has the most observable surface features

MARS
Mars

- 95% CO₂
- Thin atmosphere
Appears Pink
- seasons because it has a tilted axis –
- dust storms
- CO₂ Snow: (-110 °F (-80 °C))



ATMOSPHERE

- 95% CO₂
- Thin atmosphere
- **Appears Pink (suspended dust particles)**
- **Thin clouds of Carbon Dioxide and Water.**

CO₂ Snow: (-110 °F (-80 °C))



Mars has:

seasons because it has a tilted axis

Causes: dust storms

Spirit and Opportunity Mars Exploration Rovers (MER)



Landscape Imaged by Spirit



Victoria Crater

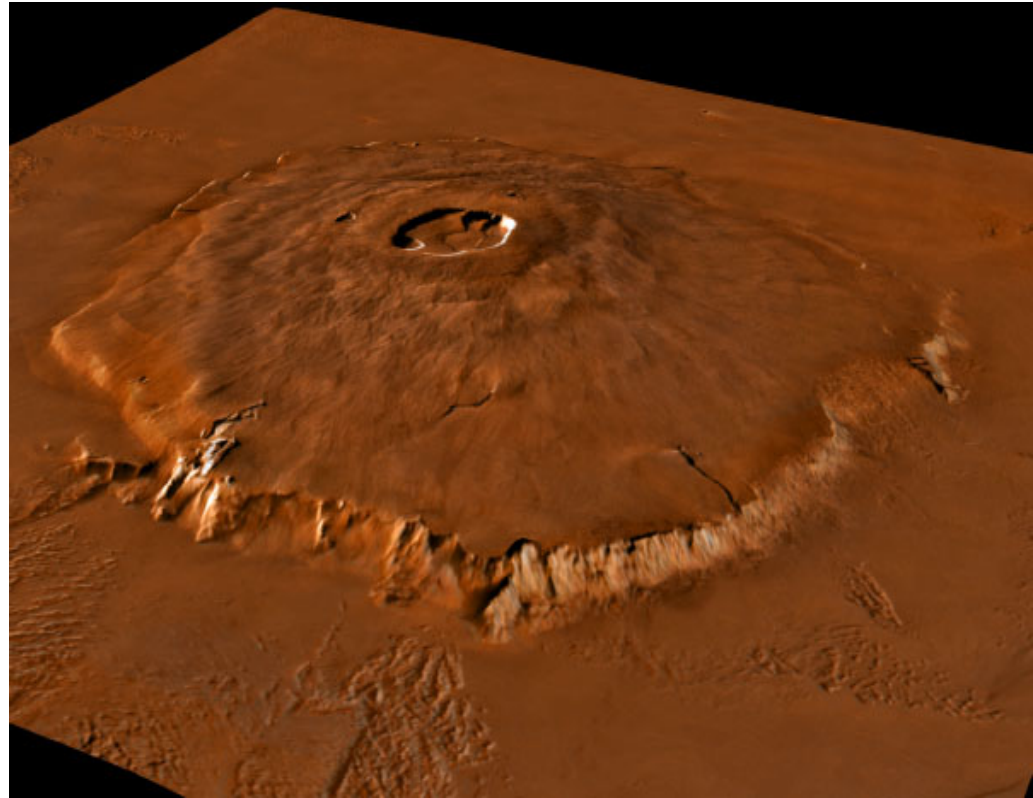
Mars Reconnaissance Orbiter (MRO)



Olympus Mons

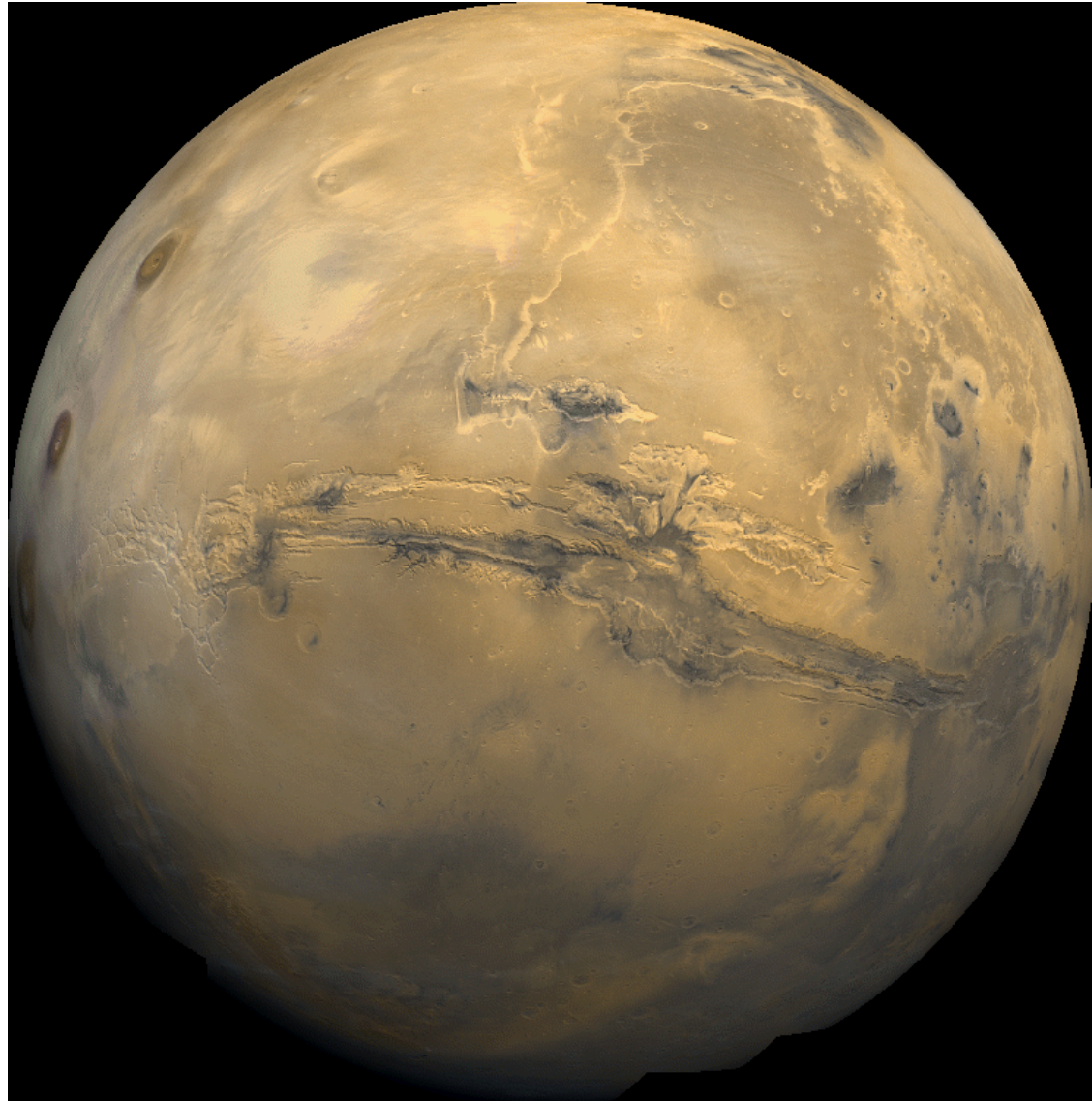
Shield Volcano - last erupted 300 Myr

- 300 mile diameter
- 15 miles high
- Caldera is 60 miles across



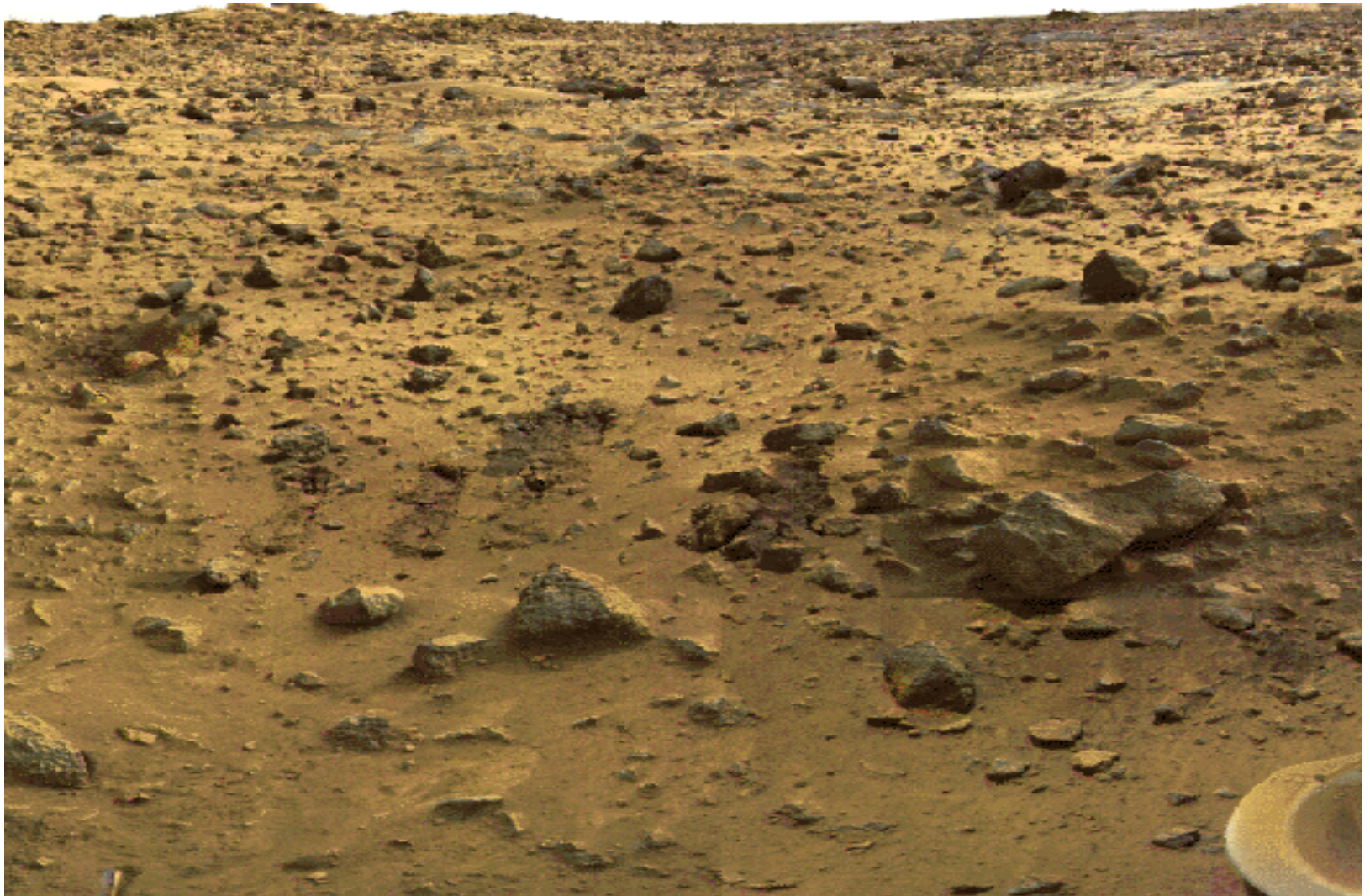
Valles Marineris

- 3,000 miles long
- 6 miles deep
- 400 miles across



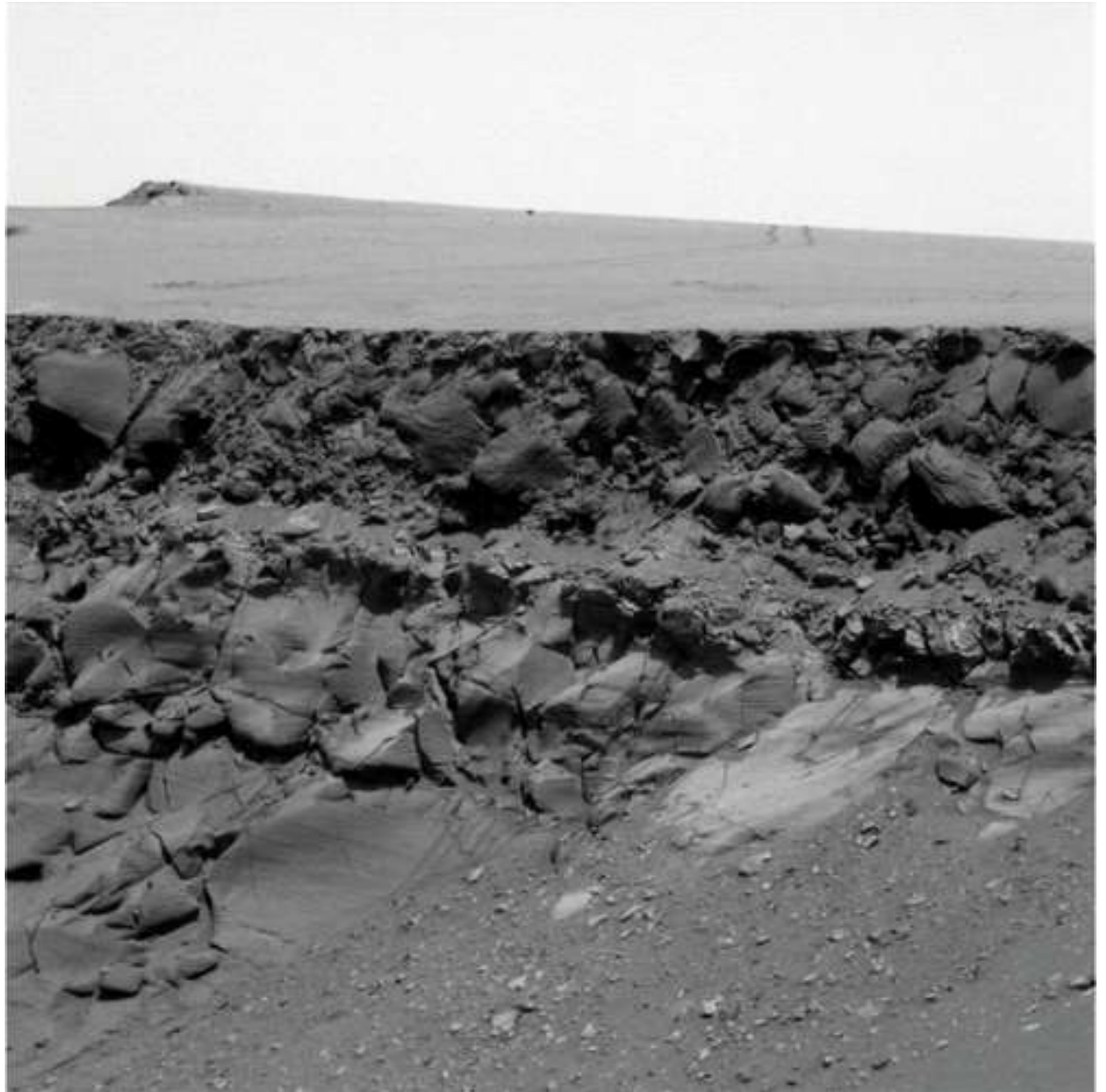
**Evidence that Mars once
had liquid water.**

Viking I, July 4th 1976

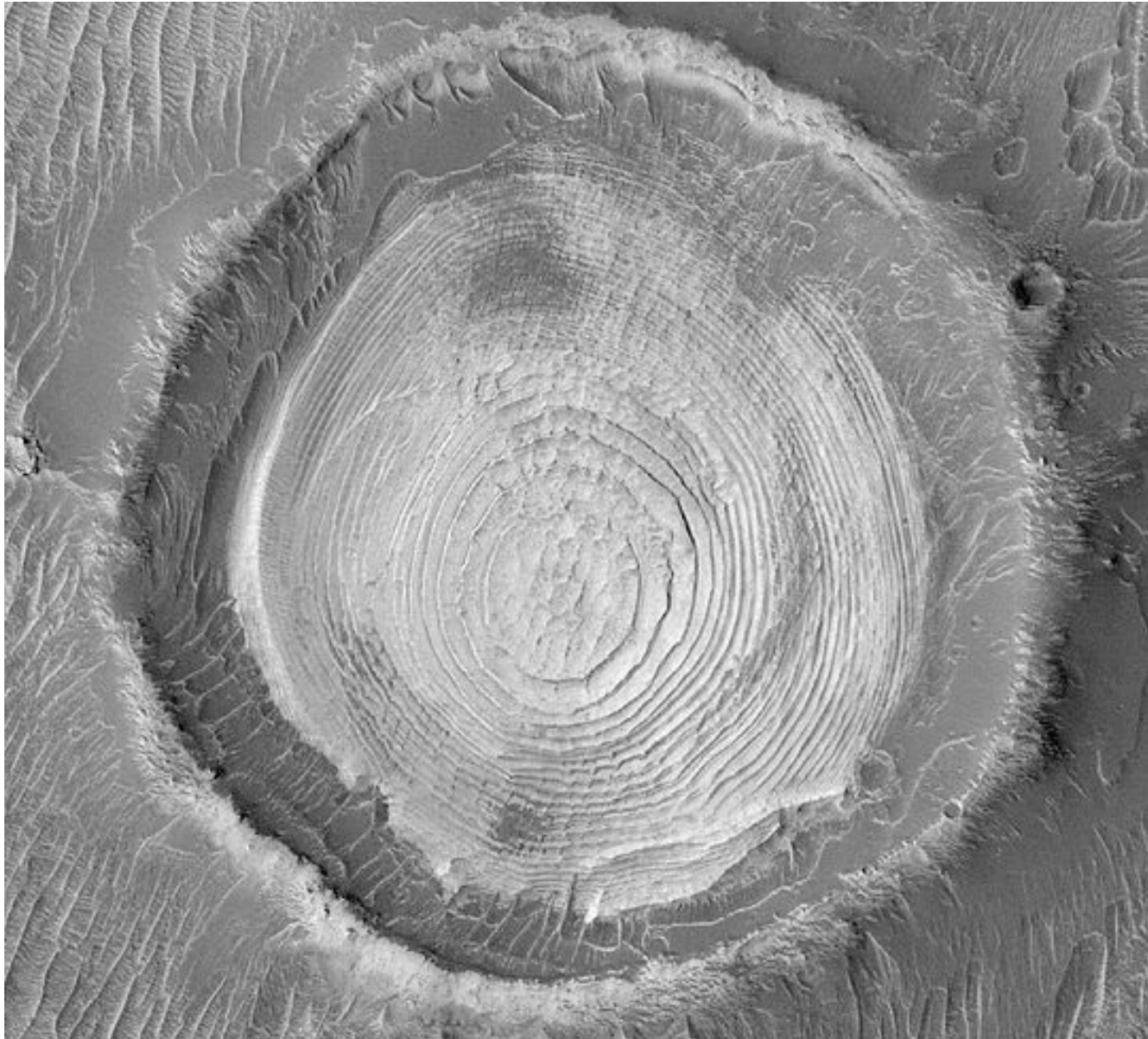


Water on Mars

- **Sedimentation layers resemble similar terrains on Earth**



Sedimentation Layers



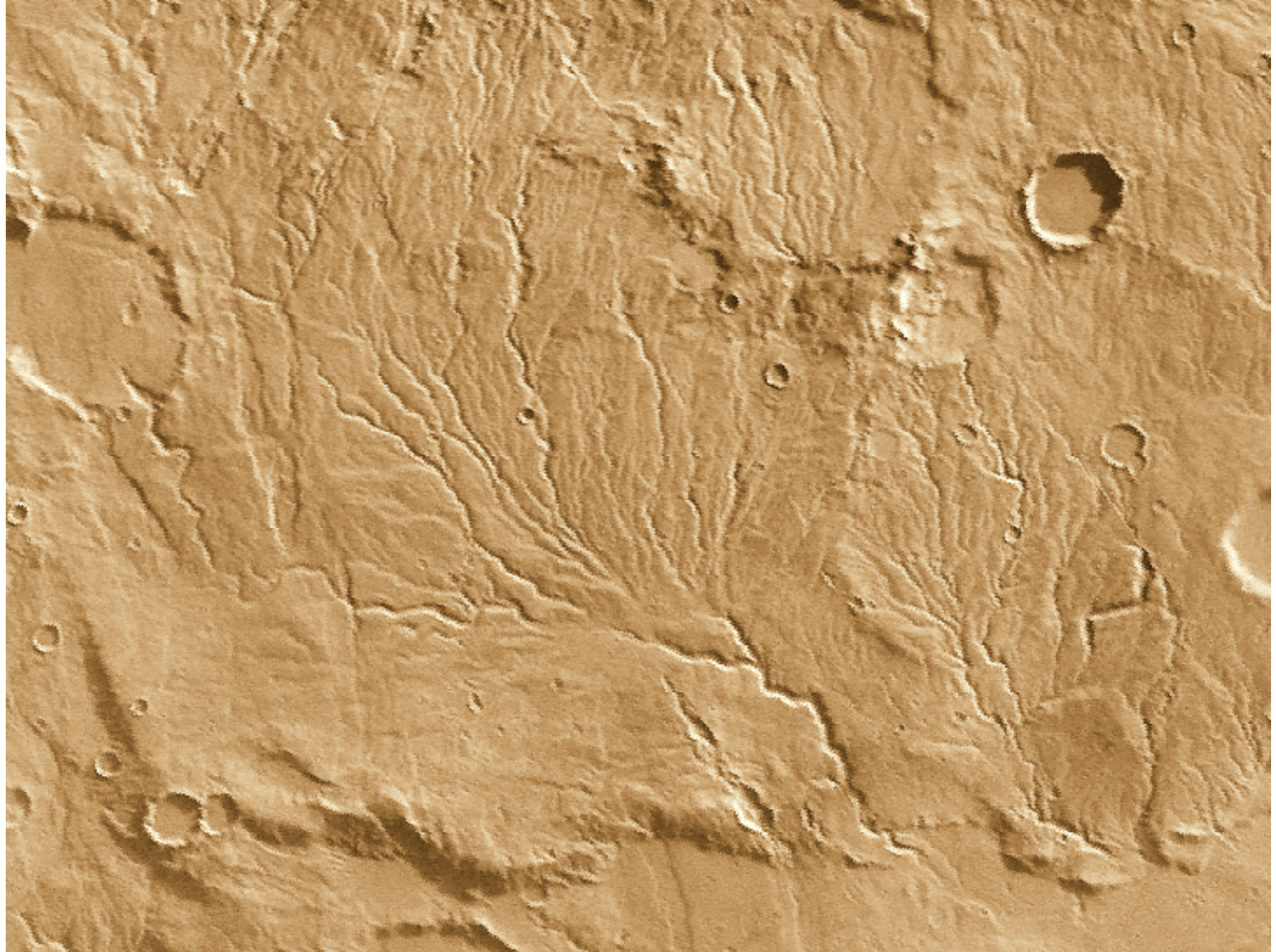
“Blueberries” - hematite-containing spherules formed as water percolated through rock beds.



Salt Deposits... formed by the evaporation...
minerals dissolved in liquid water



Small streams feeding into a valley



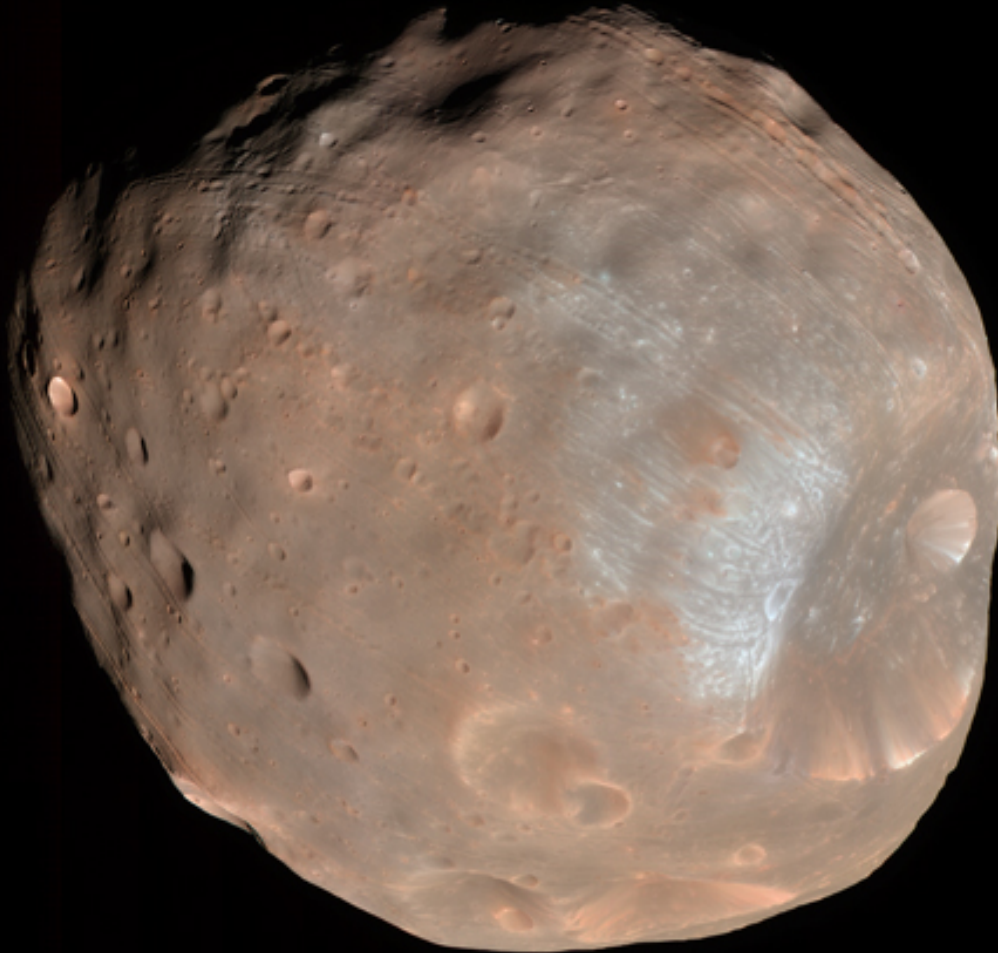
Satellites=Moons

2 moons are oddly shaped

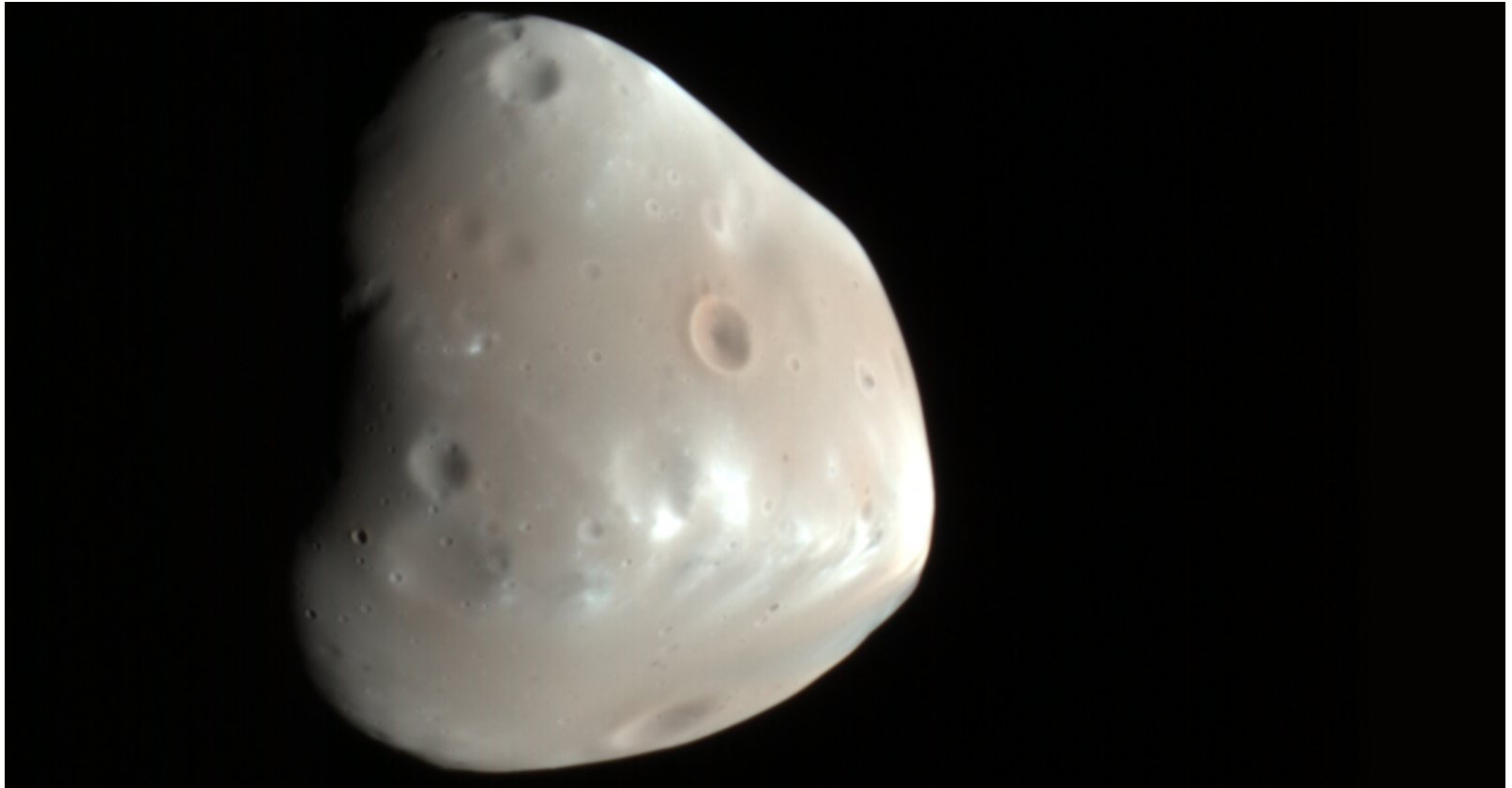


Phobos “*Fear*”

17 miles x 12 miles
orbital period: 8 hrs.



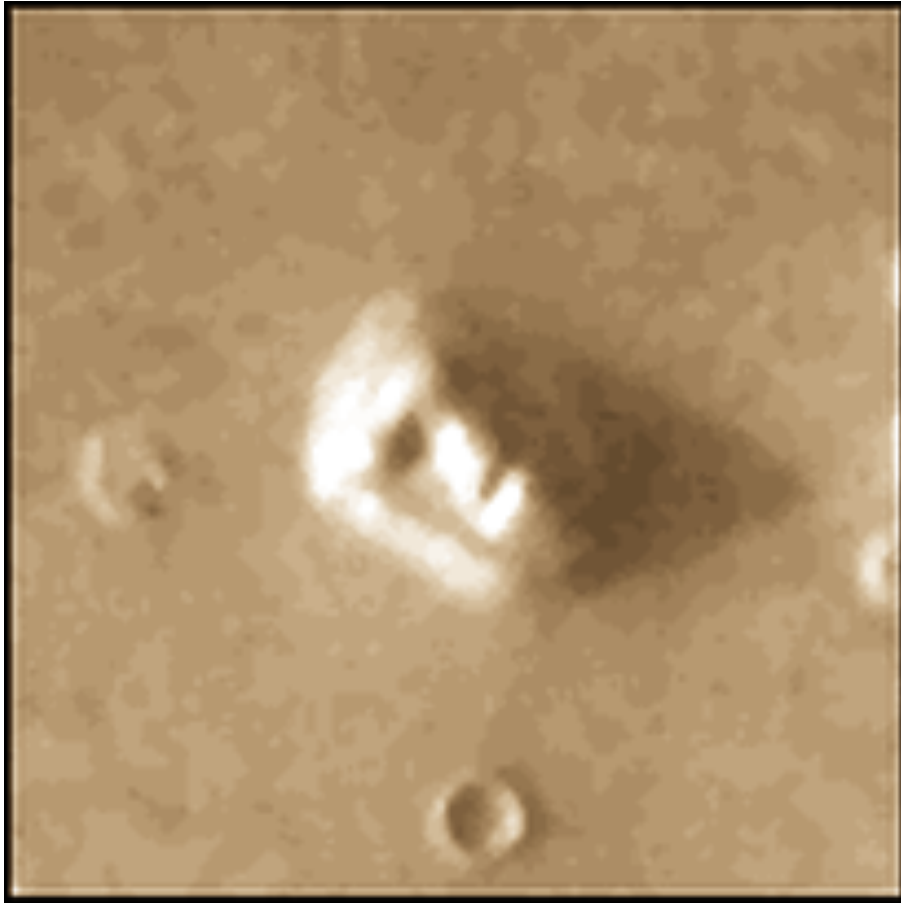
Deimos “*Panic*”



- 10 miles x 6 miles
- covered with regolith
- Orbital period: 30 hrs

Too Bizarre to be True

The “Face”



The “Happy Face”

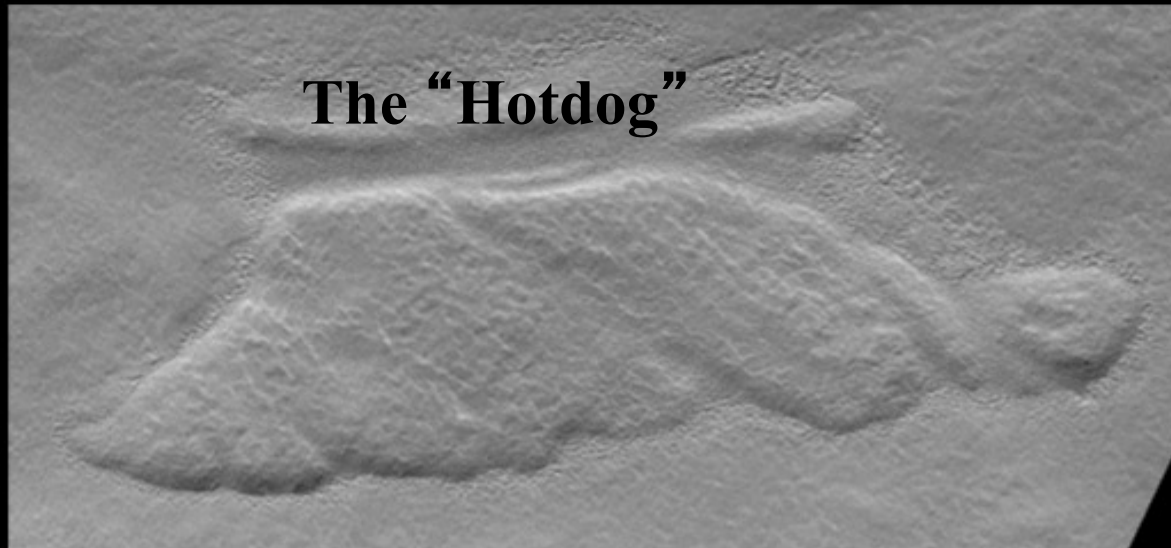


The “Heart”





“The Butterfly”



The “Hotdog”

- how curiosity landed on mars
- how spirit and opportunity landed on mars
- A year in Space: Mars
- one way ticket to Mars
- The Mars 100
- Mars One website

The End

