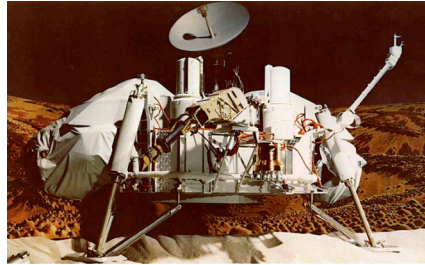


A close-up view of Mars from orbiting spacecraft



The Mars Reconnaissance Orbiter (MRO) in orbit at Mars

What did we learn from spacecraft visits from 1971-2000?

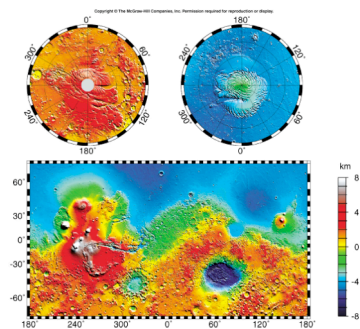


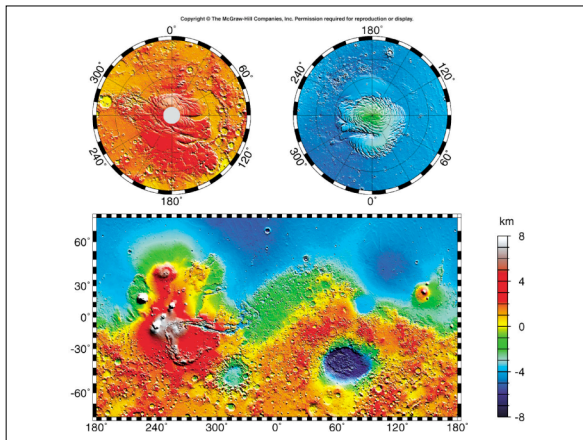
But first...Life on Mars?

- Viking biological laboratories to search for microbes. Three independent experiments
- 2 said no, one said yes
- The majority view of scientists is that the result was negative (majority, but not unanimous)

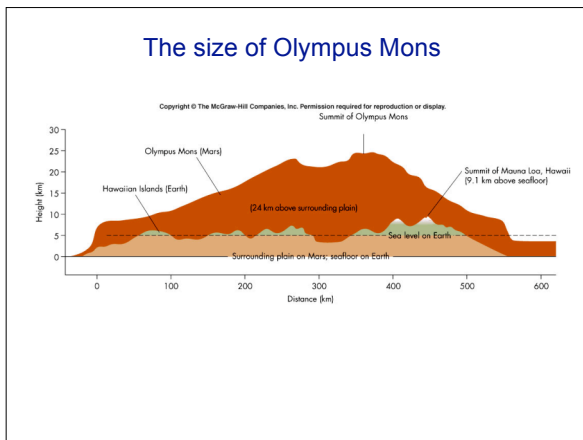


Spacecraft finding #1 - the north-south asymmetry

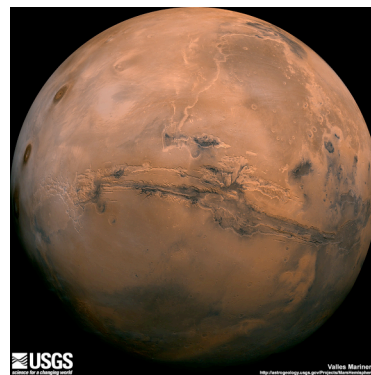




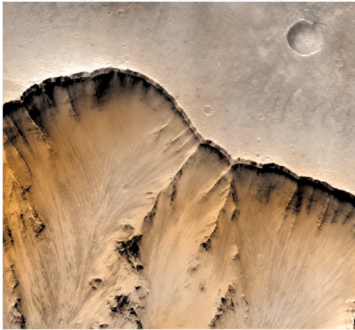
Finding #2:
The
volcanos of
Mars:
Olympus
Mons



Valles Marineris... Grand Canyon of Mars



Valles Marineris



Valles Marineris...the view of a future astronaut

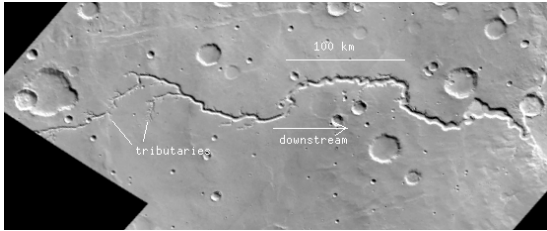


With modern technology, we can use spacecraft data to generate our own personal tour of the surface of Mars

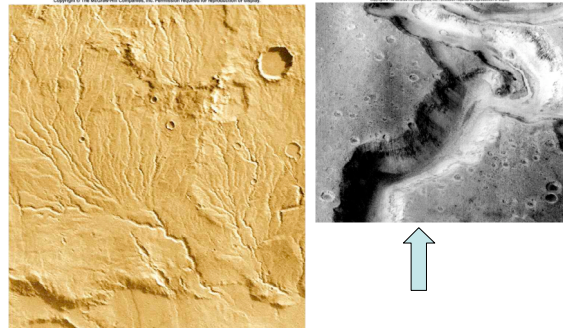
[A trip through Valles Marineris](#)

The most important finding of orbital studies of Mars: apparent water channels

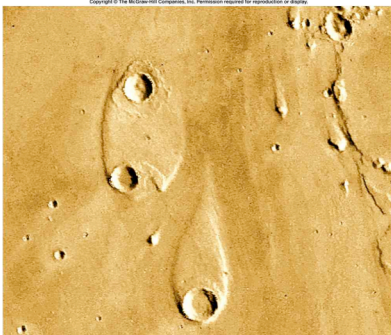
A startling discovery...the new canals of Mars



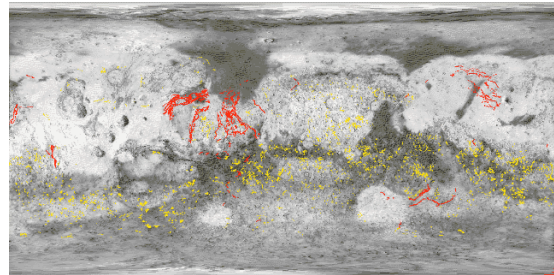
Two types of channels: Valley networks



Second type: outflow channels

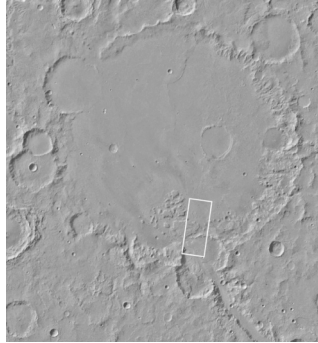


Where are water channels formed?

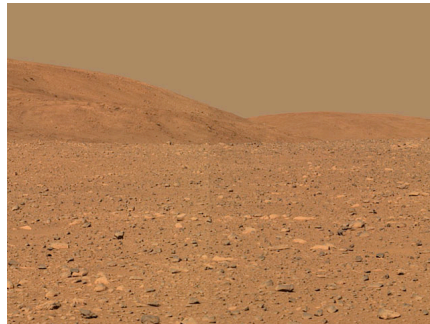


Does anyone see any patterns?

A case of particular interest:
Gusev crater



Gusev Crater: the view from the surface...more next time



A question for the scholarly assembly:

- Last time, said that the surface conditions of Mars did not allow liquid water
- Now we see what are claimed to be water flow channels, like dry river beds in the southwest
- What's up?

