

Jupiter 4

King of the Gods and Planets

318 x Earth's Mass

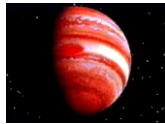
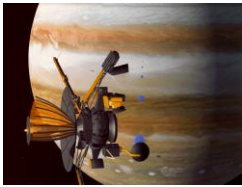
11 x Earth's Radius

1/1000 Sun's Mass



Last Jupiter Mission

Galileo (1995 - 2003)



[Galileo Probe](#)

Jupiter's Cloud layers

Haze (at the top)

Ammonia

Ammonium Hydrosulfide

Water (lowest layer)



What did the Probe find?

At 1 bar (Earth Sea level)

T = 130 K (-225 F), P=1 bar

Depth of 150 km

T = 425 K (305 F), P=22 bars

Hotter and denser than expected

Ammonia and water layers - not detected

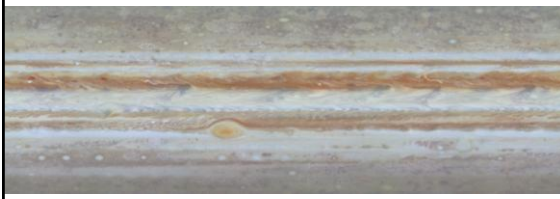
Wind velocities - FAST (700 kph, 435 mph)

Chemically like Sun

Clouds, clouds, clouds

Rotation rate ~ 10 hours

Differential Rotation \Rightarrow turbulence, and storms

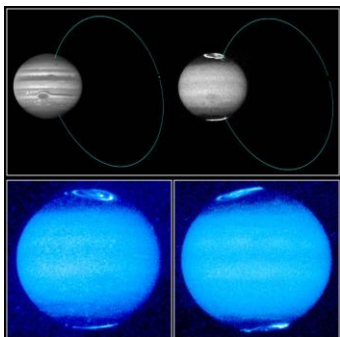


The Great Red Spot



~ 400 Year old Storm

2-3 x size of the Earth

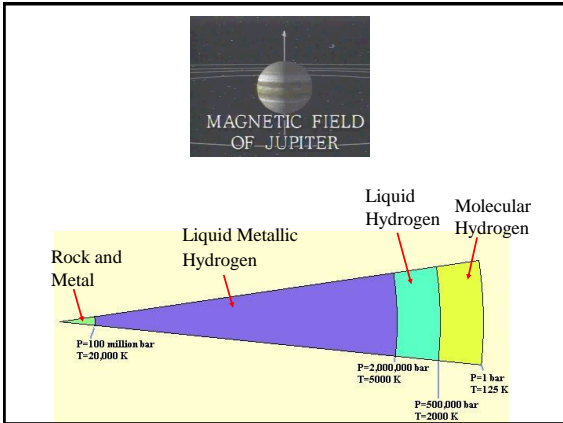


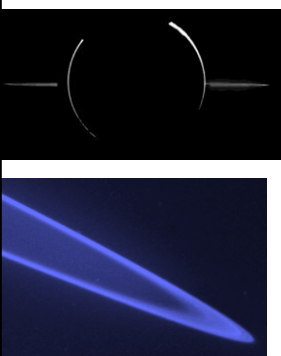
Aurora requires a magnetic field

What's Jupiter's magnetic field like?

How is it produced?

Jupiter Aurora HST · WFPC2
PRC96-32 · ST ScI OPO · October 17, 1996
J. Clarke (University of Michigan) and NASA





Jupiter's Ring System



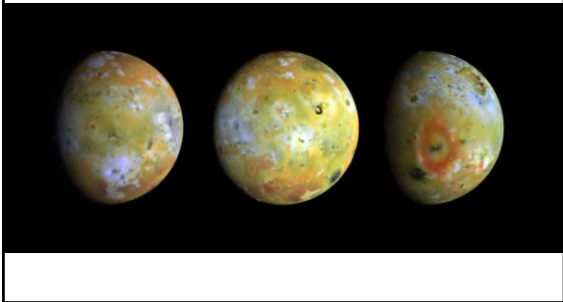
Satellites of Jupiter

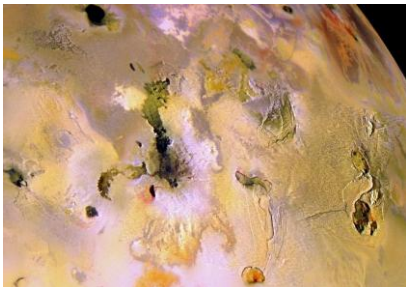
Currently 60+ known
satellites

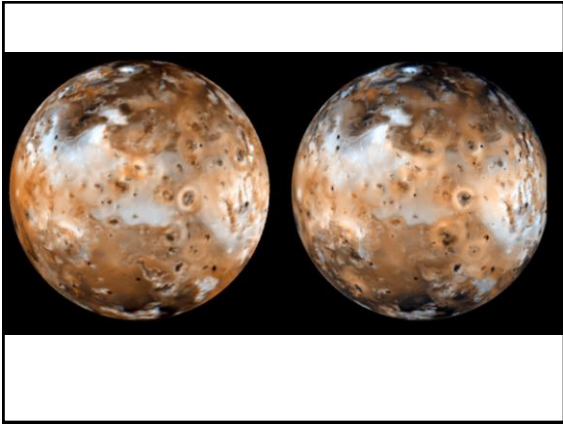
4 largest satellites are
the Galilean Satellites

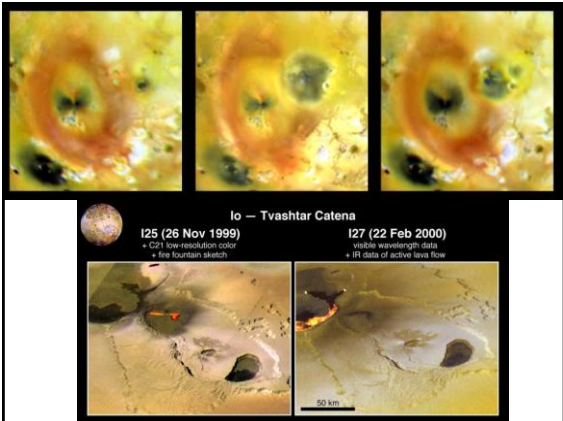
**Io, Europa,
Ganymede, Callisto**

Io - The Volcanic World

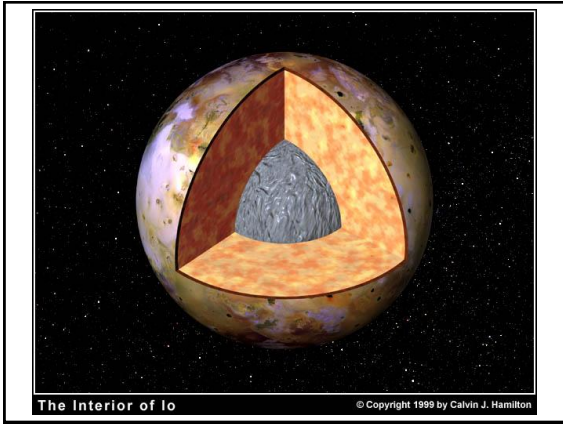






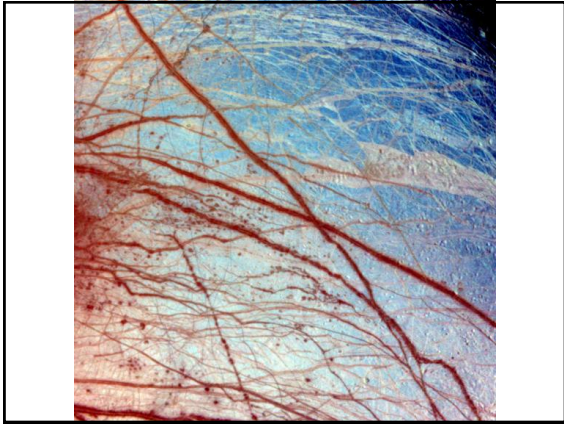


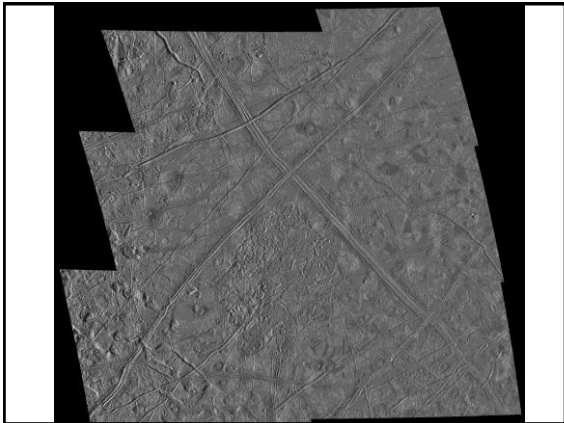


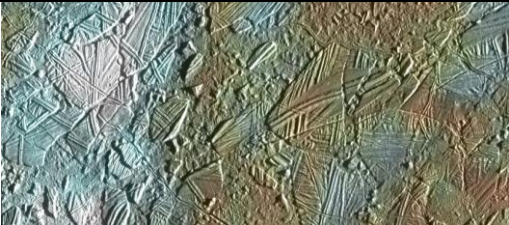


Highest density
Fewest craters
Youngest surface
Closest to Jupiter
Tidal heating!

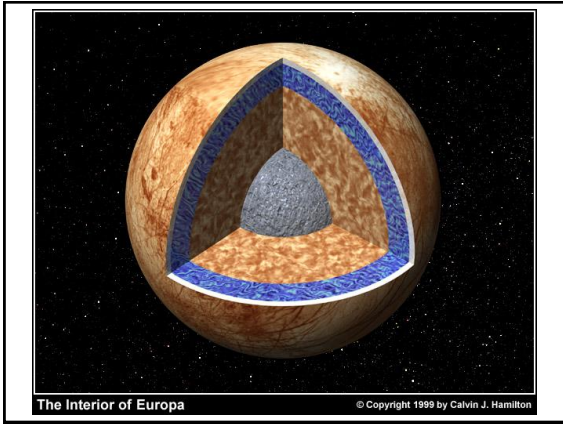
Europa - The Ice World





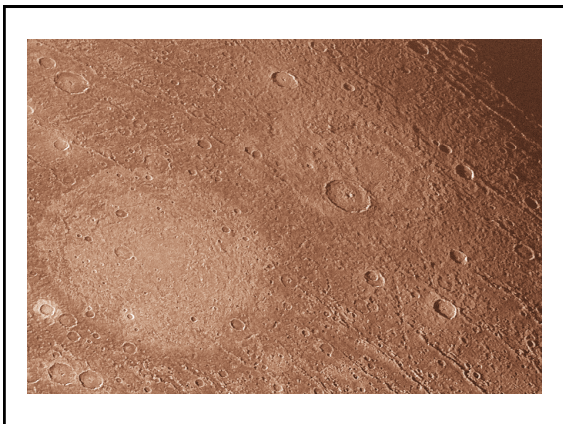


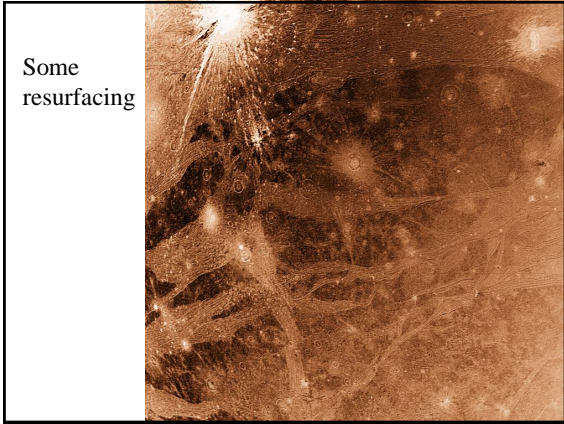
Ice features slowly changing
Very few craters
Lower density than Io
Slightly older surface

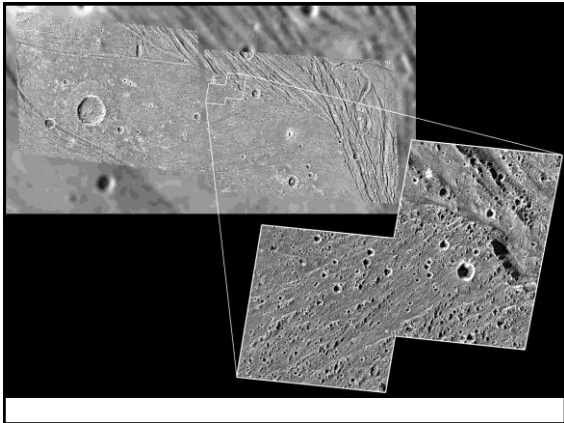


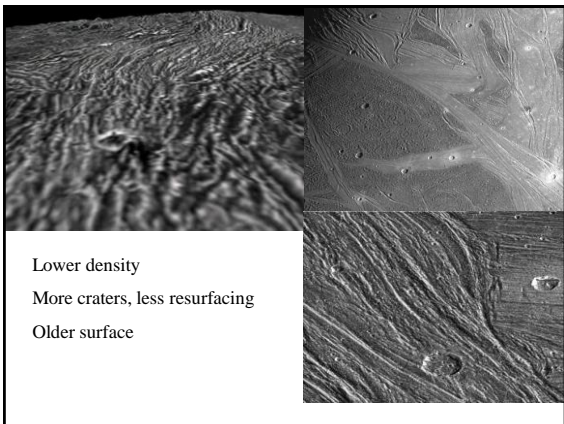
Ganymede - The Largest Moon



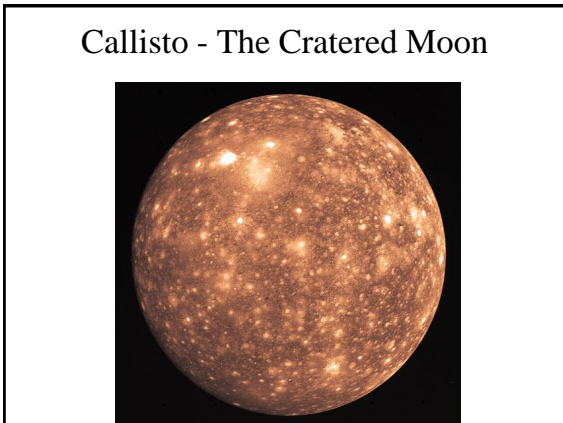


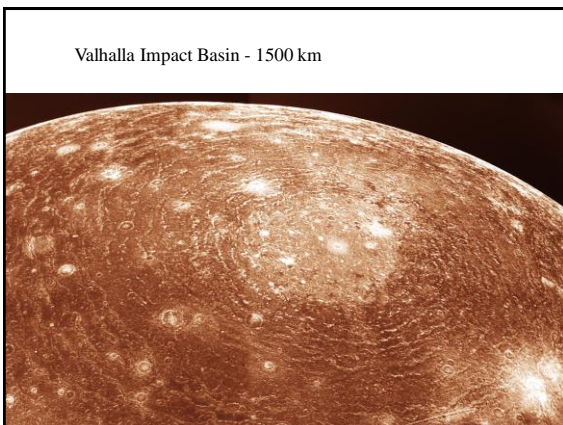


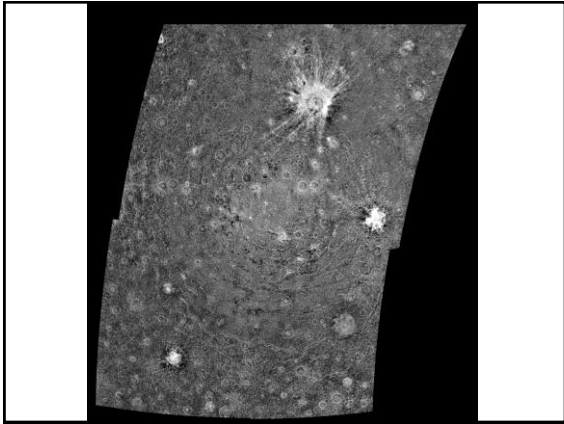


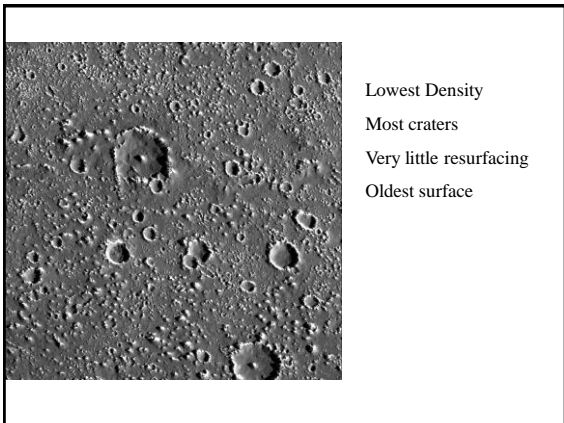


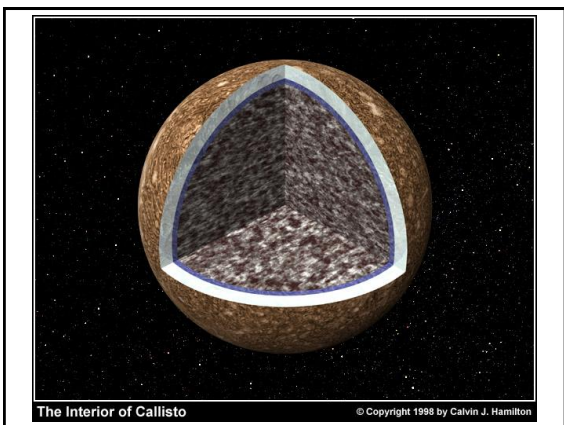


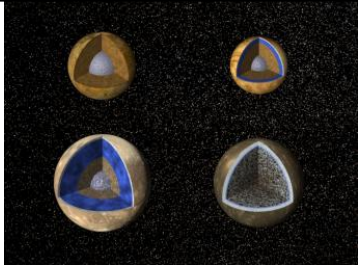












Io	Europa	Ganymede	Callisto
Closest To Jupiter		Furthest	
Highest density			Lowest density
Mostly Rock			Mostly Ice
Fewest Craters			Most Craters
Youngest Surface			Oldest Surface
