Our nearest neighbour, the Moon

Carolin Crawford
Gresham Professor of Astronomy
Moon’s diameter is $\frac{1}{4}$ that of the Earth. The average distance is $30 \times$ diameter of the Earth. The surface area is less than $\frac{1}{10}$th of the Earth’s. The mass is 1%, and volume is about 2% of the Earth’s.
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John Adams Whipple
GIBBOUS

FIRST QUARTER

CRESCENT

NEW

Sunlight

waxing

waning

FULL

GIBBOUS

THIRD QUARTER

CRESCENT
P-M Hedén (Clear Skies)
Sunlight
Earth's axial tilt to the Ecliptic
mare
Highlands - anorthosite
material that has been previously melted and then cooled
~4.6 billion years old

Regolith – breccias
pre-existing rock that has been changed by being crushed and melted
3.9 to 3.8 billion years ago

Mare - basalts
material that erupted in magma-lava outflow
3.2 to 3.9 billion years
Infrared Reflectance

Blue = water absorption strength on Infrared Reflectance

Chandrayaan-1 Moon Mineralogy Mapper

ISRO/NASA/JPL-Caltech/USGS/Brown U
Lunar Reconnaissance Orbiter (LRO)
...& Lunakhod 1 ... (1970)
X-ray Astrophysics – The High Energy Cosmos

7th November 2012 1pm

NASA/Apollo 17