“moonquakes” result from release of tidal energy

4 important plots:

(1) siderophile content in lunar mantle vs. Earth mantle
   -- siderophile elements (“iron lovers”) are depleted in lunar mantle as compared to Earth’s mantle
   -- since Moon formed from Earth’s mantle, the siderophiles must have sunk to the core
   -- independent evidence of a lunar core (just from the chemistry of a moon rock!)

(2) moon rock/carbonaceous chondrite
   -- fewer volatiles in lunar rock sample compared to lunar mantle
   -- evidence that Moon went through an era of much high temperatures

(3) oxygen isotope ratios
   -- show that Earth and Moon are made of the same material
   -- consistent with impactor hypothesis for lunar formation

(4) Angular momentum as function of mass density
   -- asteroids have excess angular momentum (gravitational interactions with planets, esp. Jupiter)
   -- so does Earth (consistent with angular momentum added by the impactor which formed the Moon)

The Moon stabilizes the obliquity (a.k.a. axial tilt) of Earth; much greater obliquity variations are present on Mars
   -- variations in obliquity = more pronounced seasonal variations