

To Frame the World—19 Sept

- We pretend to be Jean (Giovanni) Cassini, Director of the Paris Observatory.
- We propose a grand plan to “Frame the World” to the Louis XIV. The expedition to Cayenne will determine the distance to the outermost planet in the solar system!



Giovanni Domenico Cassini, (1625 - 1712)
engraving by N. Dupuis
www.sil.si.edu/digitalcollections/hst/scientific-identity/fullsize/SIL14-C1-18a.jpg

Proposal to Louis XIV

- I draw the orbit of Mars & Earth at the best opposition.
 - Mars is 0.38AU from Earth.
 - Jean (in Cayenne) & I (in Paris) will measure the distance between Earth & Mars by triangulation.
 - We will then know the length of an AU.
- Kepler’s 3rd Law
 - Known to Kepler, period of Saturn is 29.5 years
 - $P^2 = R^3 \Rightarrow R = 9.54\text{AU}$
 - Because we will know the length an AU will will know the size of the solar system.

