

Hitch a ride to Mars

J. A. Chávez - J. Guardado - E. Mireles

The Problem

How are we going
to solve it?



Downlink speed

Image size: 407KB

> Curiosity to MRO

Bandwidth: 256Kb/s

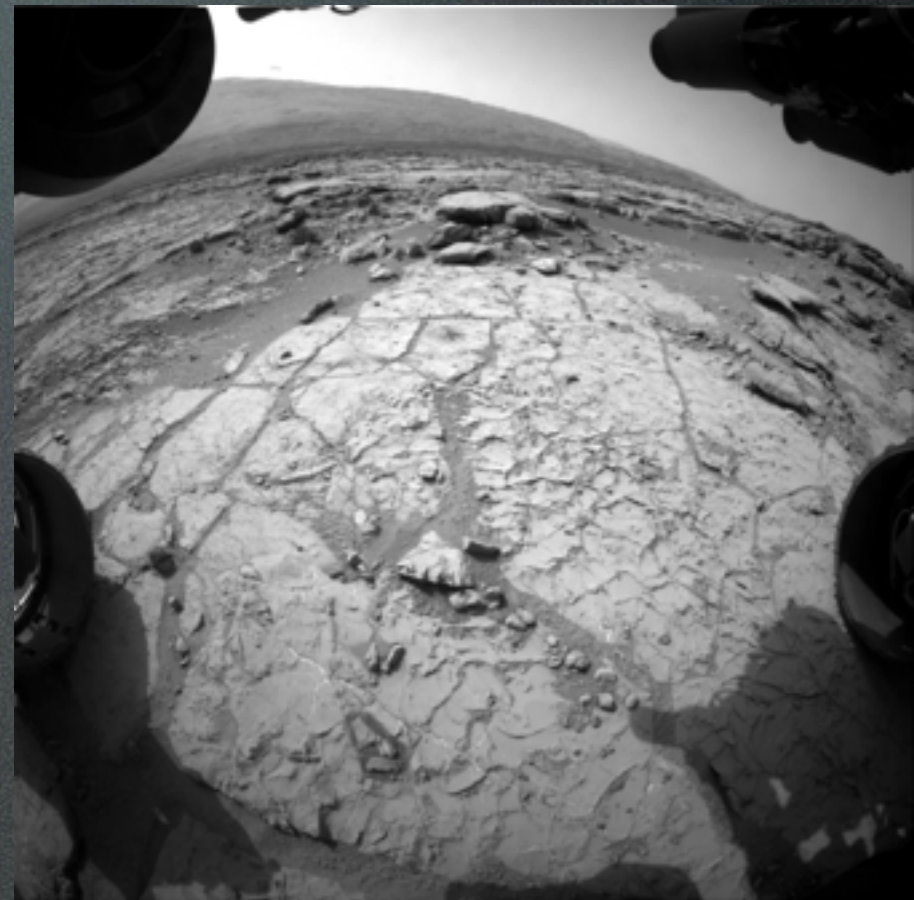
Delay: 12.71 s

> MRO to Earth

Bandwidth: 6Mb/s

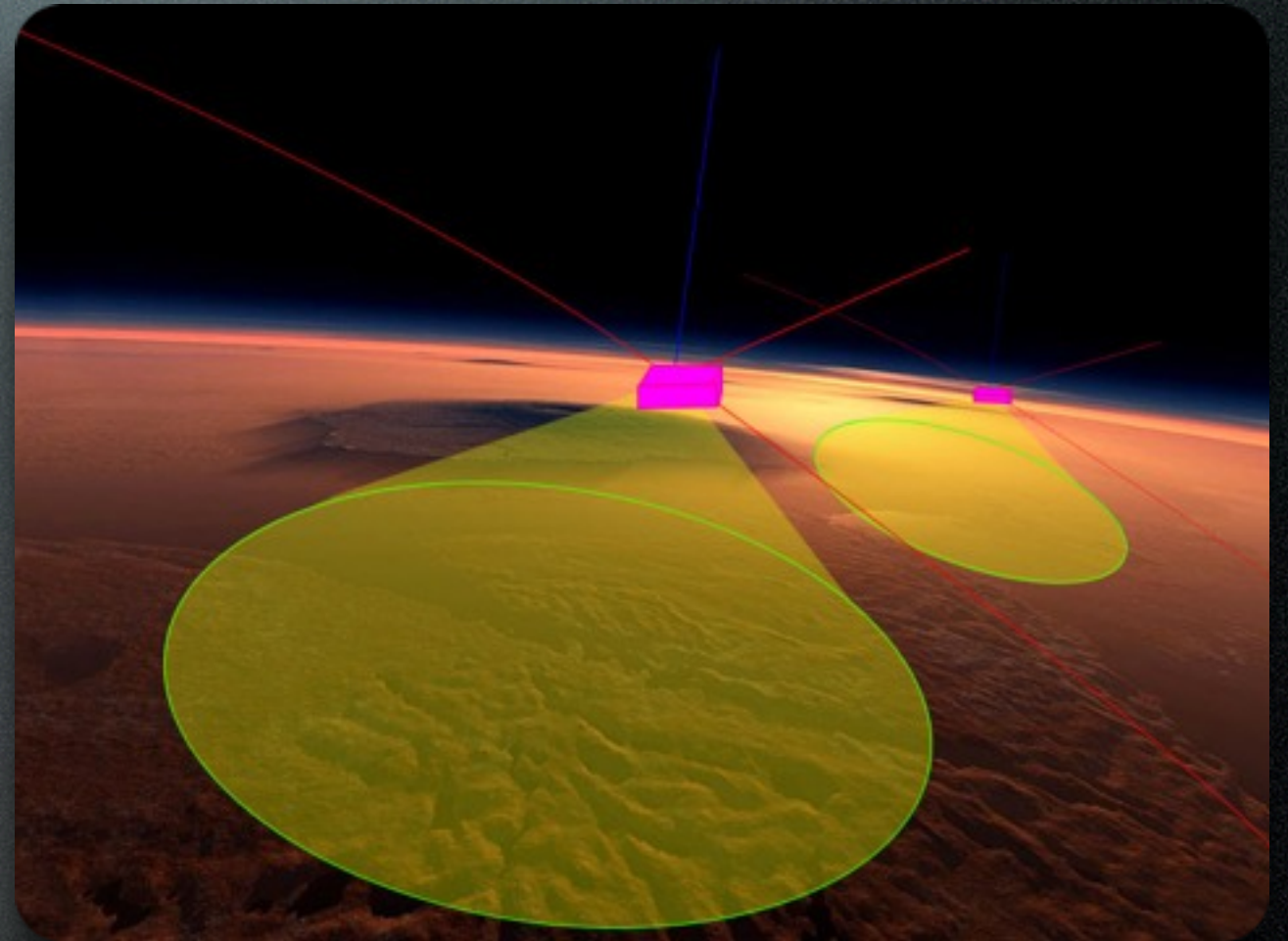
Delay: 0.54 s

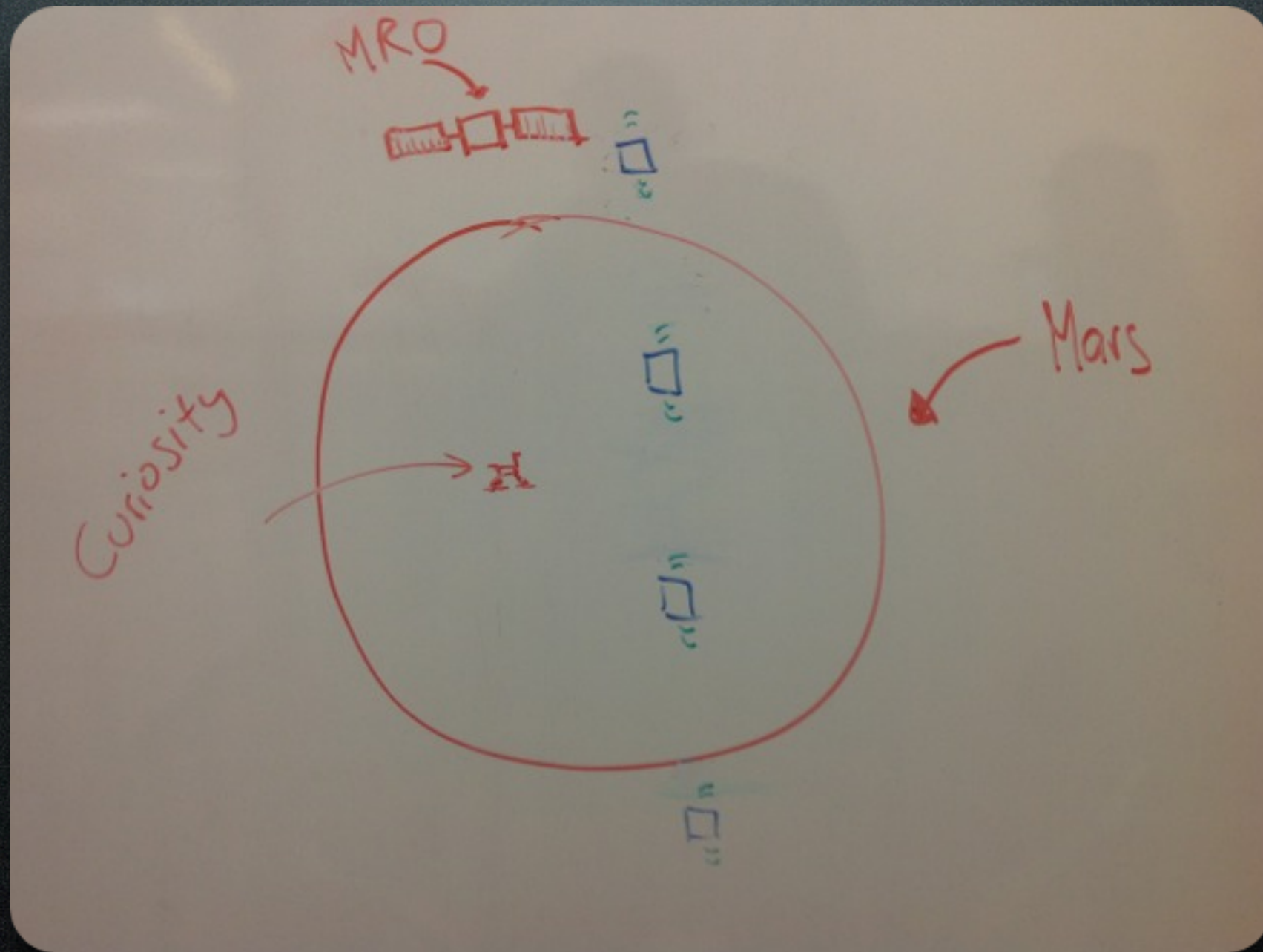
Propagation Delay: 333 s



M.R.S.

Mars Repeater System

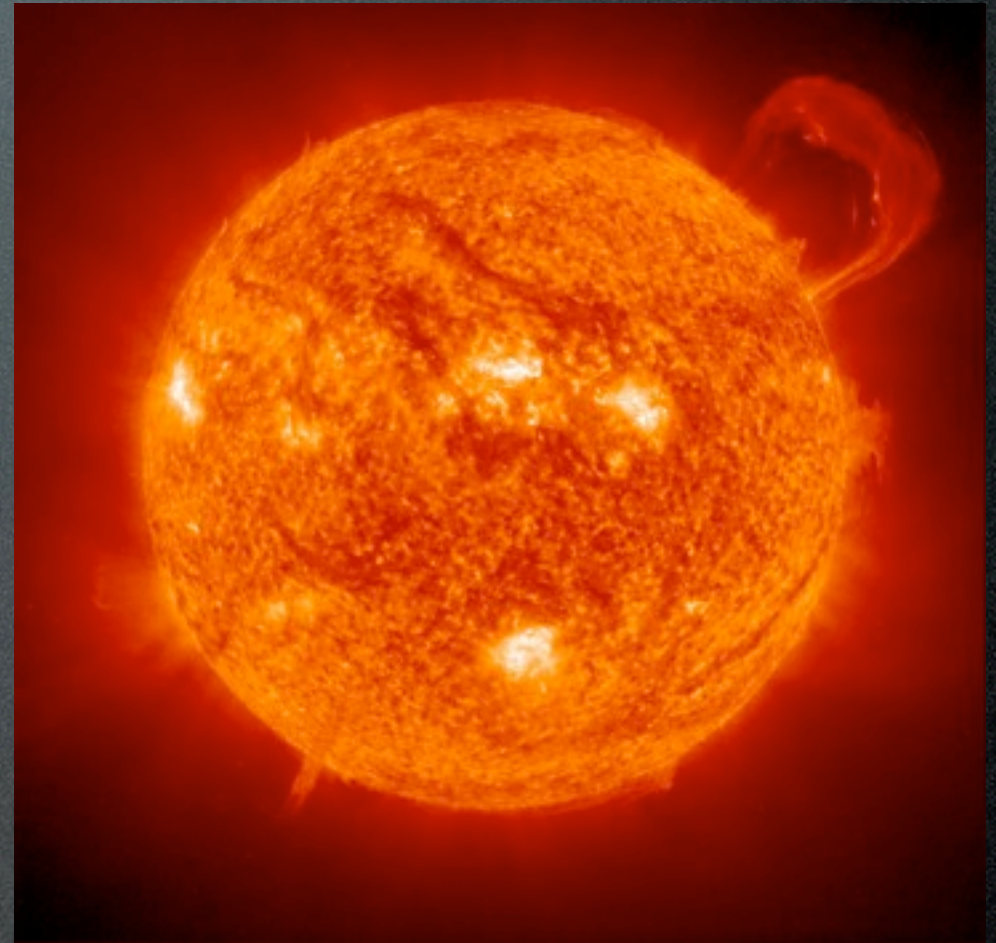




The Concept

Acomplished Goals

What did we
achieve?



Calculate link budget for communications

$$P_{RX} = P_{tx} + G_{RXEarth} + G_{TXOrbiter} - L_{FS}$$

$$L_{FS} = 20\log\left(\frac{4\pi d}{\lambda}\right)$$

The Sad Truth

:(





Hitch a ride to Mars