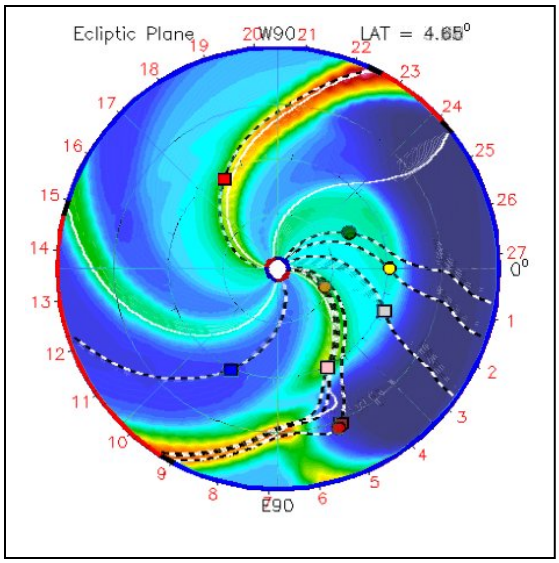


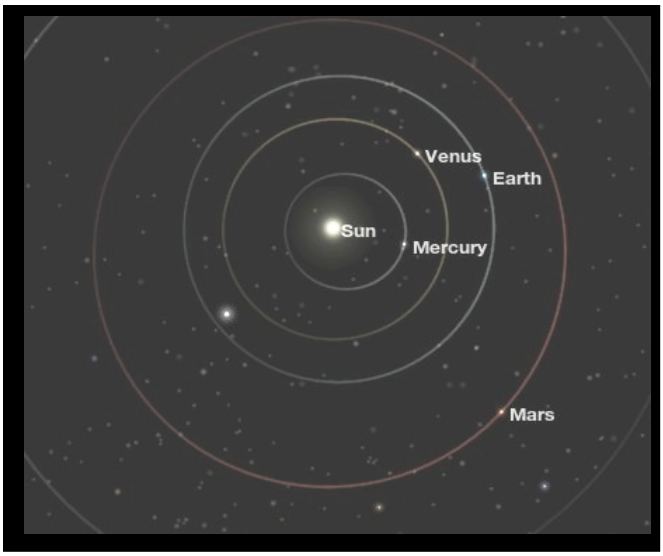


## Get the Data

Visit EOSS **http://1.usa.gov/RkSMFA** to recreate the scene shown above. Recommended operating system: MS Vista or later; Browser: MS Internet Explorer 8 or later.

**Step 1** – Click on the 'Visual Controls' tab and make sure that the following items are selected with a 'white spot': planets, labels, orbit lines, and metric. All others should be left 'off' of blank.

**Step 2** - Activate the 'Distance Tool' by pointing cursor at a planet name label ( example 'Sun') and right-clicking mouse. Select bottom function 'Measure distances'. Then point to destination target name label (example 'Mars') and left-click mouse to open From-To measurement panel. Read out the distance in kilometers. Also provided is the light travel time!

## Answering Questions

The mathematical model (top left image) shown in the NASA press release was calculated for July 12, 2012. It shows the location of the sun at the center, and the planets Mercury, Venus, Earth and Mars as three circles colored gold, green, yellow and blue.

**Problem 1** – Use the *Eyes on the Solar System* online tool to reproduce this view of the solar system as closely as you can.

## Math Challenge

**Problem 2** – The CME cloud traveled away from the sun at a speed of 25 million miles per day (40 million kilometers per day). Use the Distance Tool to measure the distance of each planet from the sun on this day, and estimate how many days it took for the cloud to reach each planet.

# Answer Key

**Problem 1** – Use the Eyes on the Solar System online tool to reproduce this view of the solar system as closely as you can.

**Problem 2** – The CME cloud traveled away from the sun at a speed of 25 million miles per day (40 million kilometers per day). Use the Distance Tool to measure the distance of each planet from the sun on this day, and estimate how many days it took for the cloud to reach each planet.

Time = Distance / Speed

Mercury: Distance = 69 million km, so Time = 69/40 = **1.7 days**.

Venus: Distance = 106 million km, so Time = 106/40 = **2.7 days**.

Earth: Distance = 151 million km, so Time = 151/40 = **3.8 days**.

Mars: Distance = 234 million km, so Time = 234/40 = **5.9 days**.