

April fool? No foolin'...

April 4 2011, By Tammy Plotner



Mariner 10. Credit: NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington. And also thanks to H. Levenson!

If you fell victim to an April Fool's prank, then consider that life can play some of the most ironic jokes of all. On April 1, 2011 the Mercury MESSENGER was taking some of its first images from Mercury's orbit when it accidentally captured the totally unexpected... the ancient Mariner 10.

According to the NASA Press Release, the first reaction of some on the

MESSENGER team was that the feature to the left of Mercury's limb must be an imaging artifact. "It's the effect of solar neutrinos on the WAC's CCD," pronounced Project Scientist Mack Knott. The imaging team was skeptical of this explanation, however, and all Knott could add was "I could explain it to you, but you'd have to understand Feynman diagrams."

The imaging team brought the anomalous image to the attention of Mission Systems Engineer E. Finn Agan, who immediately called an emergency gathering of the Collision Avoidance Review Board. Fortunately, the unusual object in the image did not appear to be in the immediate path of MESSENGER's next few orbits, but the fact that earlier and subsequent images of the same scene did not include the object prevented a determination of its trajectory.

One of MESSENGER's Science Team members, Prof. S. T. Rom, recognized the object immediately as Mariner 10, the only spacecraft before MESSENGER to have visited Mercury. Launched in 1973, Mariner 10 flew by Mercury three times in 1974 and 1975 before communication with the probe was lost. Prof. Rom is the only member of the MESSENGER team to have served on the science team of Mariner 10 as well.

The Science Operations Center was filled at the time with MESSENGER team members, and everyone proceeded at once to theorize on why Mariner 10 might appear in an MDIS image of Mercury. Mission design lead Mick Adams quickly calculated that Mariner 10 should not be encountering Mercury on this date. "Mariner 10 and Mercury were in a resonant state that brought the spacecraft by the planet once every two Mercury years. By my calculation, this appearance is 23 days early."

Guidance and control lead E. C. Shaughn offered that the effect of solar

radiation should have substantially altered Mariner 10's orbit over the past 36 years as a result of solar sailing. Propulsion lead Brecht Engel added that some residual propellant after Mariner 10's last propulsive maneuver may have outgassed, and that multiple outgassing events may also have contributed to trajectory changes.

MESSENGER's navigation team members, all of whom are named Williams, plugged these suggestions into their codes. Minutes later they were able to announce to all assembled that Mariner 10 appeared to be in a new resonant state, one synchronous with Earth's period. The ancient spacecraft is locked into an orbit that swings it by [Mercury](#) once every Earth year, on April 1st.

There's no joke like a cosmic one!

Source: [Universe Today](#)

Citation: April fool? No foolin'... (2011, April 4) retrieved 30 June 2024 from <https://phys.org/news/2011-04-april-foolin.html>

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