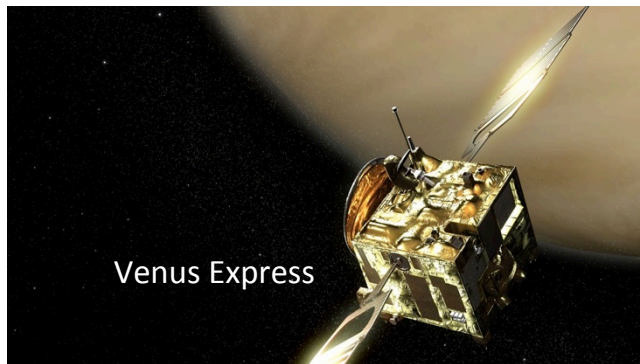
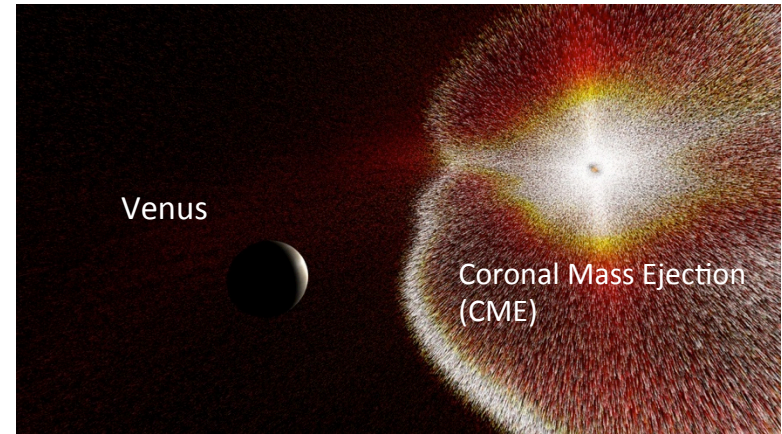
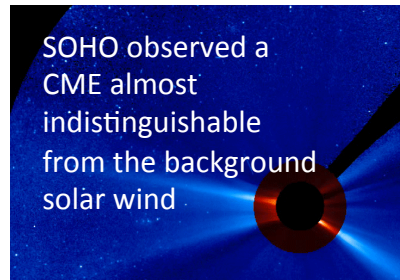


Investigating What Makes Planets Habitable

- What if Earth didn't have its protective magnetosphere?
- Are magnetic fields a prerequisite for life?
- How does space weather from a planet's star affect whether the planet is habitable or not?
- We can begin to address these questions by studying planets in our solar system: How do planets without magnetospheres, such as Venus, react to emissions from the sun?



- On Dec. 19, 2006, SOHO observed a small, slow coronal mass ejection leaving the sun. It wasn't much more than a heightened gust of the steady solar wind.
- Orbiting Venus, Venus Express observed the diffuse cloud of solar material impact the planet four days later with surprisingly large wave energy. (If the normal waves that run in front of the planet were, say, waves hitting your knees at the beach, then the waves observed would be three stories high.)
- A huge amount of Venus' atmosphere in the form of oxygen was torn off into space.
- In the case of Venus, it's clear that even small events on the sun can have gigantic effects on a planet without a protective magnetosphere.