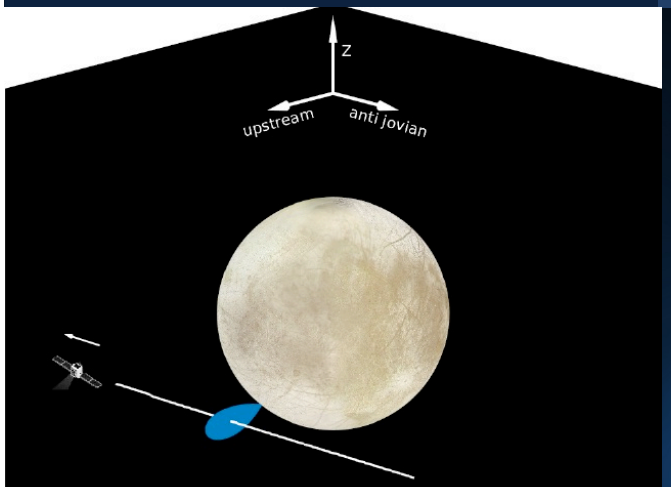
Magnetic Signatures of Plumes at Europa in 19 Year Old Data

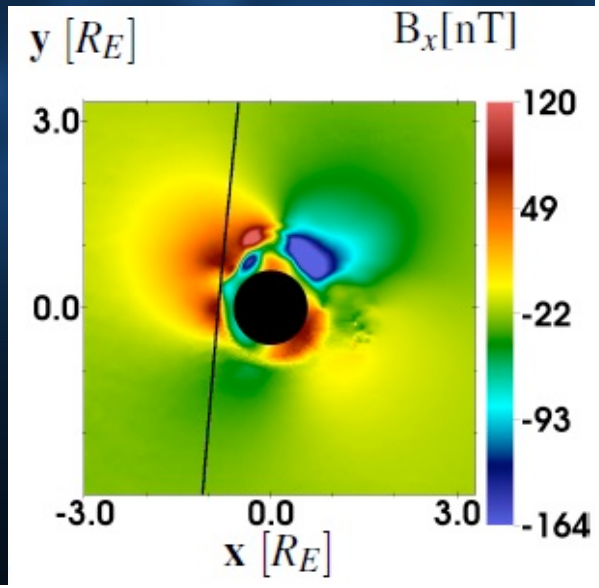


Observations from Galileo will show characteristic deformations of the Jovian magnetosphere when a plume is present.

A new method to look for plumes on Europa has been used to identify these features in data from the Galileo mission.

- Plumes emerging from Jupiter's moon, Europa, first identified in telescope observations, may also be identified using magnetic field data collected. Since Europa is located within Jupiter's magnetosphere, the moon is continuously exposed to a flow of magnetized plasma, and the interaction with a plume will locally deflect flow, and generate characteristic deformations of Jupiter's magnetic field.

- A new study revisited magnetic field observations acquired by the Galileo spacecraft 19 years ago during its E26 flyby of Europa on 03 January 2000. Comparing this data to simulations demonstrate that the magnetic perturbations observed near Europa are indicative of a water vapor plume in the moon's trailing hemisphere.
- This finding is highly relevant for the planning of synergistic measurements during NASA's upcoming Europa Clipper mission.



Arnold et al. (2019) *Geophys. Res. Lett.*