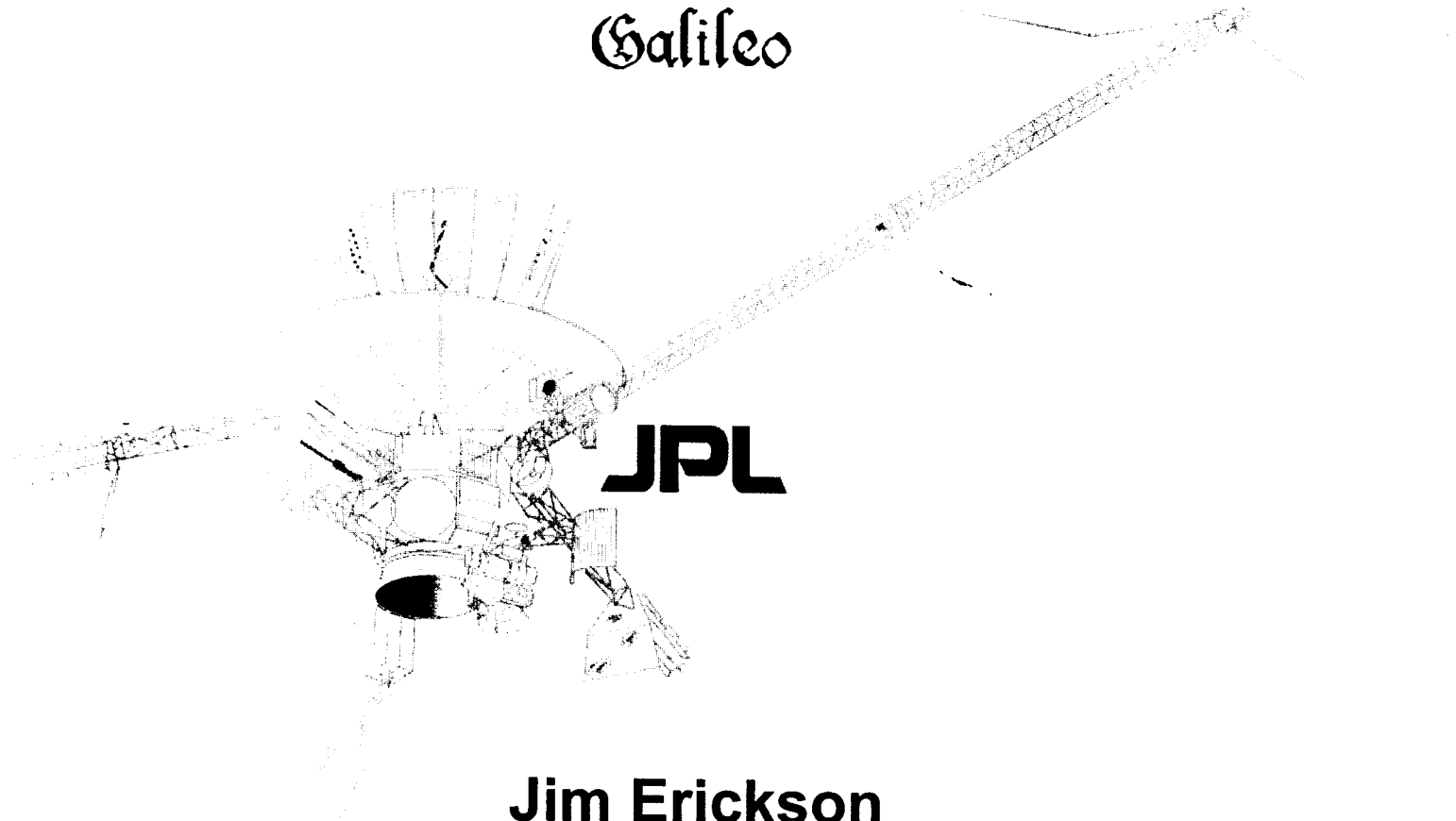


# Galileo Post-GEM Option

Galileo



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# Galileo

## Post GEM Planning



- Plan is for a tightly focused, inexpensive follow-up to the present GEM (Galileo Europa Mission).
- Full Science Option allows for additional Io coverage, Europa magnetic field measurements (key to evidence of an ocean), and Joint Cassini /Galileo Jupiter observations upon Cassini flyby in December 2000.
- Other options are available for reduced scope.

# Galileo

## Post GEM Options

**JPL**



- Six post GEM options have been analyzed in detail.
  - A fully funded GEM extension as we have been discussing (e.g., GMM).
  - Five other options

9/18/99

JKE3

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## Full Science-Option 1



- This is the preferred Galileo Millennium Mission Option.
- It has 4 encounters, Europa 26, Io 27, Ganymede 28, and Ganymede 29.
- It enables full playback of Io 25 data from GEM.
- The Europa 26 encounter produces key magnetic field data.
  - This should resolve the question of whether Europa's magnetic field interaction fits the preferred induced magnetic field model.
  - If there is an induced field, this would be substantial additional evidence for the existence of a subsurface liquid salty ocean on Europa.
- The Io 27 encounter provides additional Io coverage, both in remote sensing and in fields and particles data, and a key backup opportunity for the GEM Io 24 and 25 encounters.

# Galileo



## Full Science-Option 1 (Cont.)



- Ganymede 28 and 29 raise Galileo's apoapsis to outside of Jupiter's magnetosphere. Science objectives include:
  - Magnetospheric measurements of the dusk side magnetosphere.
    - Joint observations with Cassini investigate solar wind effects and nature of magnetospheric dynamics drivers.
    - Galileo in situ data compared with Cassini Remote sensing and the Galileo solar wind data supports Cassini magnetospheric encounters.
  - Io volcanic observations related to magnetospheric state at Cassini encounter.
  - Atmospheric high resolution dynamics imaging in conjunction with Cassini global movies.
  - G-28 Ganymede high resolution imaging, G-29 Ganymede auroral data.