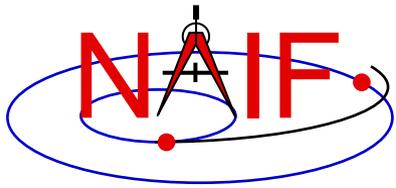


Navigation and Ancillary Information Facility

Question

**Any PDS Interest in
“Mission Visualization?”**

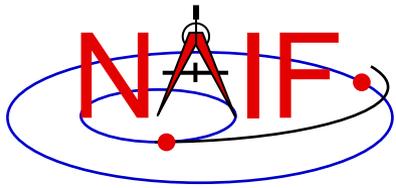
NAIF Node



Definition

Navigation and Ancillary Information Facility

- As for “geometry engine,” the term “mission visualization” probably means something different to each person
- NAIF is asking about any PDS interest in mission visualization within the **observation geometry domain** that SPICE deals with
 - But possibly extended to include the notion of “events,” particularly as this applies to times of instrument data taking
- Perhaps this question should eventually be extended to include a broader definition of visualization?



Examples of Mission Geometry Visualization Tools

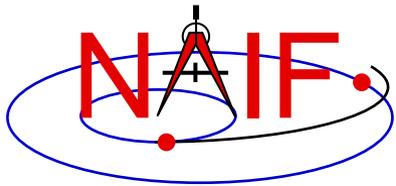
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USA

- Satellite Toolkit (AGI)
- SOAP (Aerospace Corp.)
- Science Opportunity Analyzer (JPL)
- GeoViz (SWRI)
- Solar System Simulator (JPL)
- GoView (Paul Upchurch/Caltech)
- Eyes on the Solar System (JPL)
- Solar System Visualization Project (JPL)
- TBALL (JPL)
- JMARS (ASU)
- Planet Viewers (SETI)
- Free Flyer (A.I. Solutions)
- DSim (Princeton Satellite Systems)
- SciBox (APL)
- Cosmographia/Celestia (Open source)

Foreign

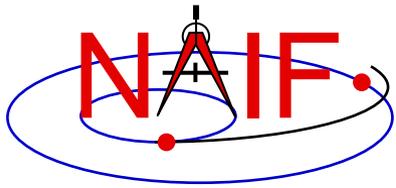
- CK View (DLR)
- MEXSOA (DLR)
- SOLAB (ESA)
- RSGS (ESA)
- 3D View (CDPP)
- Field of View Visualizer (JAXA)
- Luna-Glob Orbit Visualization (ROSCOSMOS)



Two Quick Demos

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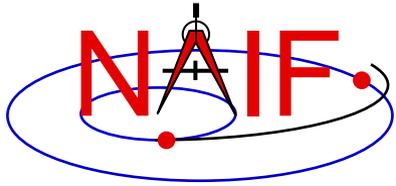
- **Rather than show a bunch of slides I'll show two quick demos of two tools that address “mission visualization” as I see it.**
 - **Eyes on the Solar System (JPL)**
 - » A web-based tool, mostly aimed at public outreach kinds of presentations
 - » Uses only “canned” data assembled at JPL
 - Data are mostly derived from SPICE
 - » <http://eyes.nasa.gov/index.html>
 - **Cosmographia (Open source, next gen of Celestia)**
 - » A local application, more suited to professional scientists and engineers
 - » Can use SPICE and some built-in data
 - » Getting some traction at JPL
 - » <http://www.cosmographia.info/>



What to do?

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- **Does PDS wish to take any action towards further developing and then offering, or pointing to (endorsing), some kind(s) of mission visualization products?**
 - **If so, when and how to proceed?**
 - » **As Michael New has noted, most folks are already busy with PDS4 and other work.**



The Demos

Navigation and Ancillary Information Facility

- **Eyes on the Solar System**
 - “Cassini’s tour”
 - Advanced; Spacecraft; Mars missions; MRO
- **Cosmographia**
 - Basic workings
 - Two of several scripts prepared by Boris
 - » MRO-CRISM
 - » GRAIL-MK (MoonKams)