Introduction to JMARS

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Topic Overview

- Who am I?
- What is JMARS?
- Why JMARS instead of...?
- JMARS 5 UI Overview
- Tools and Customization
- Adding Layers
  - Map Data – Graphic, Numeric, Global, Regional, Custom. Contour, Color, Shade, Stretch, Mask.
  - Stamp Data – Images, Numeric, Shots, Spots, Shapes and RADAR. Scatterplots, Spectra, and functions.
- Shape Layer – Built in and custom shape data. Shape tools, styles, functional columns. Map Sampling, Formulas, Customized colorization and Geologic Fill Patterns
- Crater Counting and Radial Profiling
- Modelling Layers – KRC, MCD, MCD Slider
- Landing Site Analysis Tools
- Viewing 3D data on a plane, on a shapemodel, or in JMARS AR / VR
Who am I?

• Professional software developer since 1995
• Java developer since 1997
• Member of the JMARS Development team at ASU since 2006
• Participant in the THEMIS, LROC, Dawn, OSIRIS-REx, EMIRS, Lucy, Psyche, and Europa Clipper missions
• One part of a team of many hardworking people who collaborate to make planetary data available in JMARS
What is JMARS?

- An acronym: Java Mission-planning and Analysis for Remote Sensing
- Planetary Geospatial Information System
  - Scientific planning and analysis tool, Organically Grown*
- Supported on Windows, Mac, and Linux
- Provides easy access to data for Mars, the Moon, Mercury, Venus, Asteroids, and much, much more
- Available to the public since 2003
- Used by over 10,000 registered users from 100 different countries
  - Registration is encouraged but not required
- One of the top 25 Java applications ever written (according to Oracle's Java Magazine in 2020)
Brief history of JMARS

• Written as a planning tool for the THEMIS instrument onboard Mars Odyssey
• Expanded to visualize THEMIS, MOC, and Viking data in support of THEMIS planning
• Released to the public in 2003
• Adopted as the mission planning tool for the HiRISE instrument on Mars Reconnaissance Orbiter
• Expanded to support planning and visualization for the LROC instrument orbiting the moon
• Expanded to provide visualization support on non-spherical bodies for Dawn
• Expanded to support spacecraft targeting and instrument planning as well as visualization for the OSIRIS-REx mission, including the ability to view off-body data
• Expanded to support plan verification for EMIRS instrument on the UAE Hope mission
• Used as the mission planning tool for the CaSSIS instrument on ExoMars
• Development ongoing for mission planning for E-THEMIS onboard Europa Clipper
• Current development for Psyche visualization support, including fields and particle data
• Future role as visualization tool for Europa Clipper mission
Why use JMARS instead of...?

- Actively developed and maintained
- Easy to quickly search and access planetary data
  - Thousands of maps, Millions of images
- Free
- Support
  - Online tutorials
  - E-mail support
  - Weekly "office" hours
- If you're not using JMARS, you're working too hard!
- (Also, you can still use other tools for the things they're really good at)
JMARS 5 – Available since June 2020
CTX Global Mosaic
CTX Global Mosaic + JMARS Sigma Stretch
How can you learn more?

• Weekly Online Office Hours
  • Every Friday noon – 2 p.m. MST/PDT
  • Zoom link at jmars.asu.edu

• jmars.asu.edu
  • Download
  • Tutorials
  • Videos

• @jmars_gis on Twitter

• Email us: help@jmars.asu.edu