Cosmographia

CESAR's Booklet
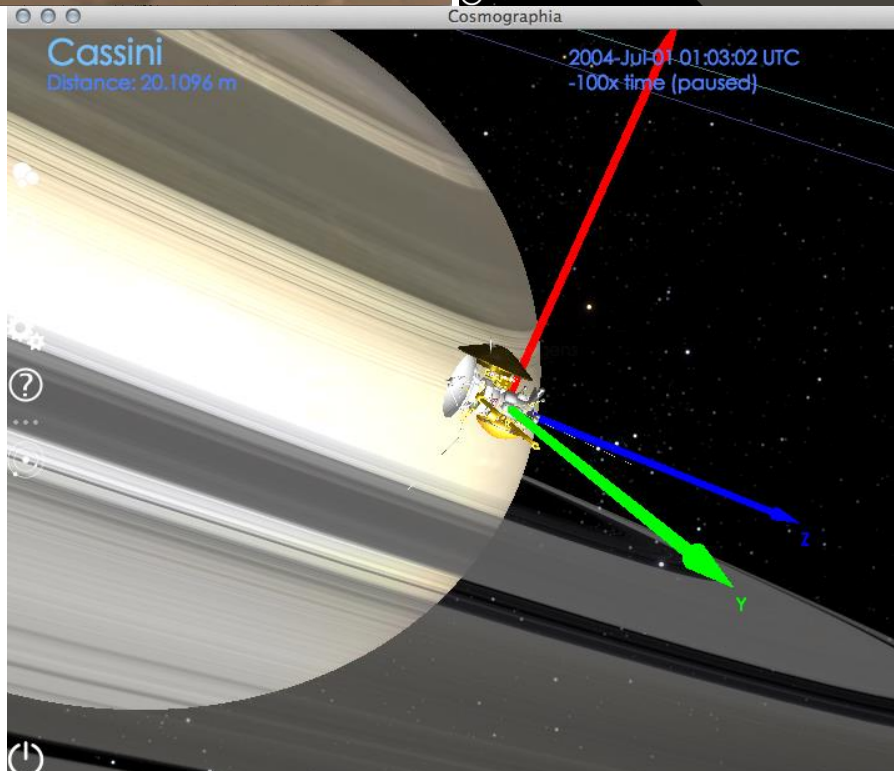
For installing Cosmographia visit the following link:

https://www.cosmos.esa.int/web/spice/cosmographia

1. Choose the file required for your operative system, download it and proceed with the installation.
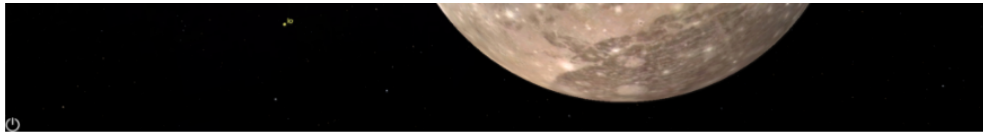
Cosmographia originated as primarily a general interest solar system simulator, and it still works wonderfully in that role. However, with permission from the tool's author, NAIF is extending the open source Cosmographia tool to make use of SPICE kernels to accurately model the observation geometry of planetary missions for which substantial or complete sets of SPICE data are available. With these extensions SPICE-enhanced Cosmographia should also be of interest to professional scientists and engineers.

DOWNLOADS

Cosmographia is a stand-alone application for which executable binaries have been prepared on relatively recent versions of OSX, Windows and Linux. They likely work on more modern versions of the named operating systems and perhaps on some older versions as well. The latest version of SPICE-enhanced Cosmographia for the different flavour of OS is available in the following links:

- SPICE-enhanced Cosmographia for Mac OSX (64-bit) (492 MB) Compatibility: OS X 10.8.5 or later
- SPICE-enhanced Cosmographia for Windows (64-bit) (519 MB) Compatibility: Windows 7 or later
- SPICE-enhanced Cosmographia for Linux (64-bit) (547 MB) Compatibility: Built on a machine running Ubuntu 12.04 LTS, but should run under most modern versions of the Linux operating system such as CentOS, RHEL and SUSE.

Figure 1: Cosmographia webpage. Download links rounded

2. Open Cosmographia and get used to the basic tools. On the left side of the screen there is a menu with several icons. As it appears in the official page of Cosmographia, their functionality can be summarised as follows:

Figure 2: Tool Bar icons functionalities

3. By clicking on the "Search" icon we can look for our desire object, let's choose Jupiter. If we press to "Go to" button we will be redirected to its position.

Figure 3: Press "Go To" for moving to Jupiter

4. And by scrolling down the wheel of the mouse we will zoom out the view. Once we see the 4 biggest Jupiter Moons we can stop scrolling.

5. If we right click on any moon another menu will pop up, and if we select "Trajectory" the path of the Moon around Jupiter will be shown. Follow this procedure with the 4 moons: Io, Europa, Ganymede and Callisto.
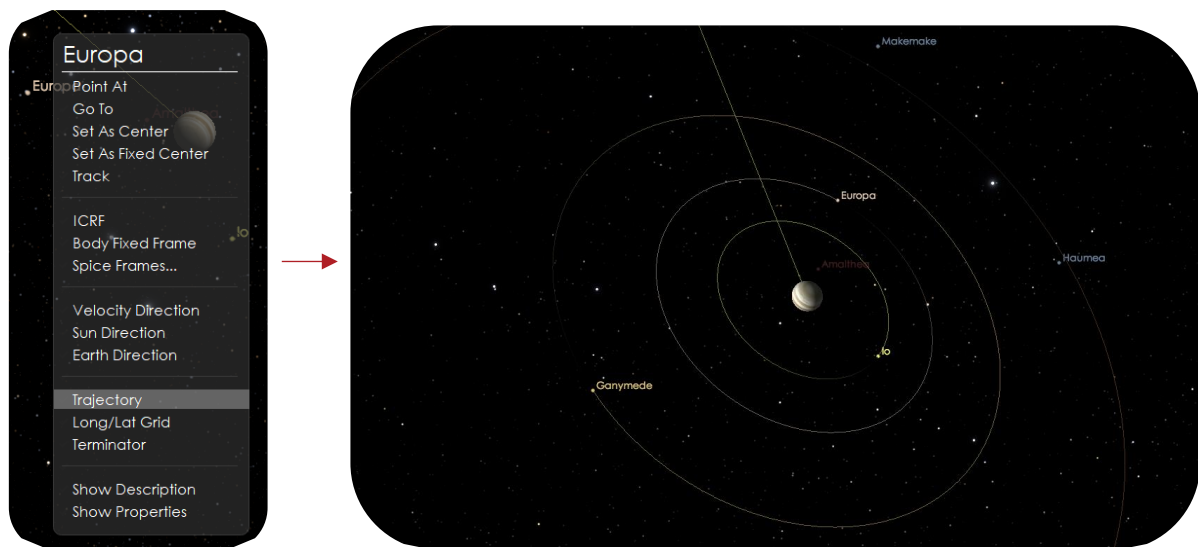

Figure 4: Right click (left image); Trajectory paths of Jupiter moons (right image)

Also, in this right click menu other options are available. You can explore them

6. We can play with the time rate in the left side menu and we can accelerate it and see the motion of the moons dancing around Jupiter.

Links

- An official User Guide can be found here: https://cosmoguide.org/
- https://www.cosmos.esa.int/web/spice/cosmographia
- https://www.cosmos.esa.int/web/spice
- https://naif.jpl.nasa.gov/naif/