OpenSpace: Scientific Astronomy Visualization

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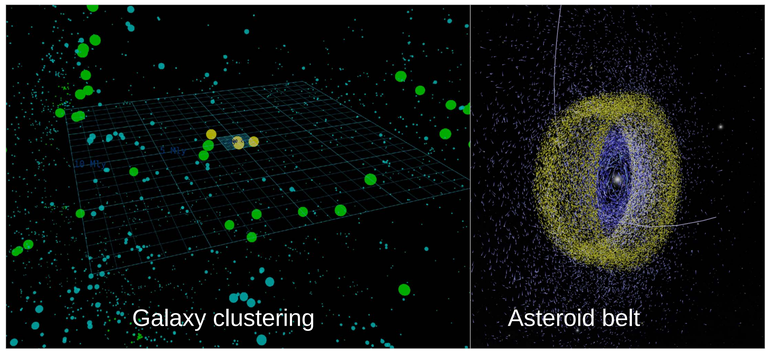
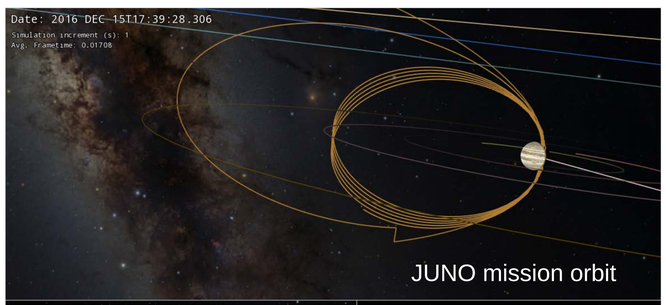
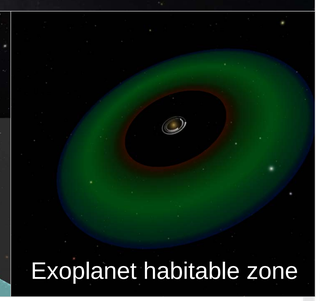
Introduction

OpenSpace brings the latest techniques from data visualization research to the general public. OpenSpace supports interactive presentation of dynamic data from observations, simulations, and space mission planning and operations.



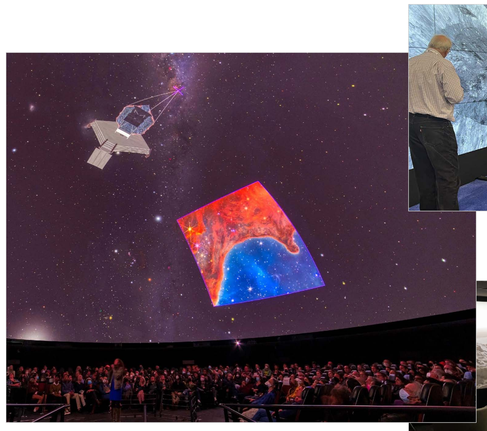
Funding objectives include enabling STEM education, and scientific outreach for NASA and ESA missions.

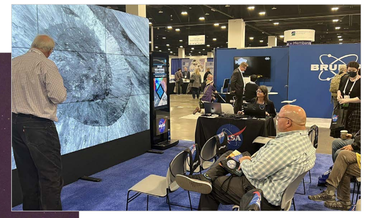




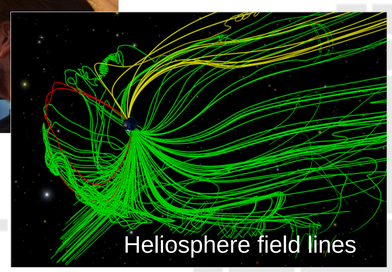
Platforms and Venues

OpenSpace works on Windows, Mac, and Linux, with an extensible architecture powering high resolution tiled displays and planetarium domes, and makes use of the latest graphic card technologies for rapid data throughput. Possible runtime environments range from single desktop use up to display walls and planetariums.





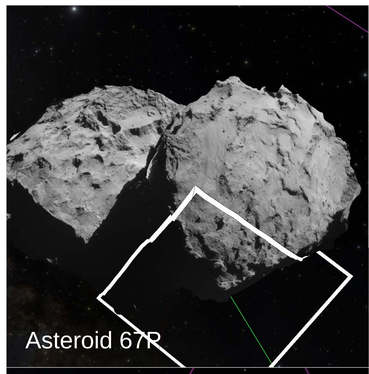
The software is free to download and use. Open source licensing allows users to contribute code, log bugs, request features, and even contribute new content.

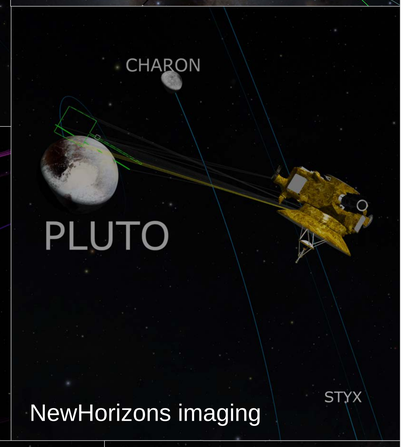


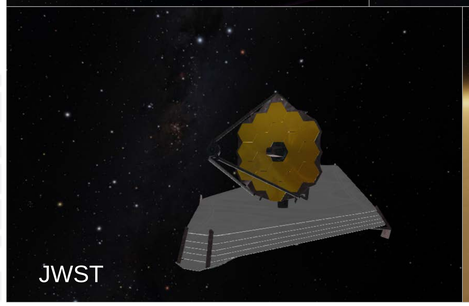
Scientific Missions

Exploration probe missions by NASA or ESA are difficult to comprehend due to their long transit times and vast distances. Positions, scales, and orbital mechanics are represented with the highest available accuracy using JPL SPICE.

A variety of visualization methods and tools are incorporated in the software to allow users to control camera position, simulation time, and rendering properties of scene elements.







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