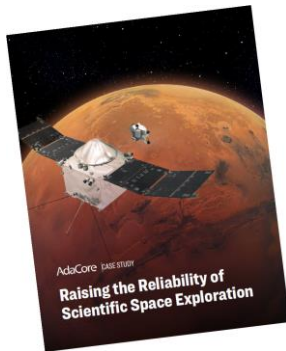


<b>CLIENT</b>	<b>AdaCore</b>
<b>PROJECT</b>	<b>Case Study: LASP OASIS-CC</b>
<b>OBJECTIVE</b>	<b>Describe how LASP benefited from the support of AdaCore and their GNAT Pro tool suite in upgrading their OASIS-CC software system from Ada 83 to Ada 95.</b>

## COPY EXCERPT

### How Ada is helping the Laboratory for Atmospheric and Space Physics minimize risk, reduce cost, and assure reliable control of software used for spacecraft and instrument operations



Call or write CopyEngineer to receive a PDF of the complete case study.

Or view/download it online at: <https://bit.ly/AdaCore-LASP-case-study>

The Laboratory for Atmospheric and Space Physics (LASP) at the University of Colorado Boulder was founded in 1948, a decade before NASA. It began as the Upper Air Laboratory, using captured German V2 rockets to send scientific instruments into our planet's upper atmosphere.

Today, LASP continues to focus on scientific research, both in the earth's upper atmosphere and beyond. LASP partners with government agencies like NASA and the National Oceanic and Atmospheric Administration (NOAA), commercial entities like Ball Aerospace, and other universities like the University of Arizona and Northern Arizona University, to develop, test, and operate spacecraft and scientific instruments. That's why they chose Ada and SPARK.

Projects in which LASP has participated include NASA's Kepler space telescope mission, the Mars Atmosphere and Volatile Evolution Mission (MAVEN), the Solar Radiation and Climate Experiment (SORCE), the Total and Spectral Solar Irradiance Sensor (TSIS-1) currently aboard the International Space Station (ISS), the Emirates Mars Mission (EMM), and many others.

#### A highly scalable command and control system

One of LASP's key tools for fulfilling its mission is the Operations and Science Instrument Support–Command & Control (OASIS-CC) software suite. OASIS-CC is LASP's in-house-developed, ground-based, real-time command and control system for spacecraft and instruments. It can be scaled from low-level development through integration, test, and flight ops. LASP has been using OASIS-CC in all its mission roles for more than thirty years.

The OASIS-CC project began in 1985 and chose Ada as the implementation language. Although Ada was relatively new at the time, its software engineering benefits were clear to aerospace systems procurement agencies and developers. The language has been used on OASIS-CC ever since.

According to Jason Gurgel, the OASIS-CC program manager at LASP, OASIS-CC uses a client-server model. The core server makes network connections to scientific instruments, spacecraft systems, ground control systems, other ground stations, ground instrumentation, simulators, and other systems. The OASIS-CC client GUIs (Graphical User Interfaces) allow users to design workspaces to display command control panels, telemetry data, and additional information...