

SPACE AND ATMOSPHERIC

Exploration. Operation. Preservation.

We are at a turning point in human history. As we embark on the new millennium, many nations have expressed a renewed vision for exploring our neighboring worlds and creating a permanent human presence beyond Earth. Commercial space interests are being driven by a new league of space entrepreneurs. The first private spaceship has made a historic flight to prove that space is no longer the dominion of governments. Space is being increasingly used as a platform from which to understand, protect and secure our home planet. A new space renaissance is emerging.

Optech is a high-tech renaissance company with long-term vision and near-term solutions. Our space and atmospheric lidar systems offer key technological solutions that enable robots and humans to sense and visualize the world around them at the speed of light.

The nature of the space business requires that our event horizons reflect the long-term thinking of our space agency customers as well as the commercially driven time scales of today's space entrepreneurs. Our 30 years of terrestrial lidar heritage has been combined with the world leading space expertise of MD Robotics to meet the challenges of the space frontier.

The conquest of space and the understanding of our home planet will never be complete as long as there is a spark of wonder and a desire to explore in the human species. Optech plans to be there every step on every planet along the way.

Strategic Relationships

In addition to working closely with global space agencies, Optech has a strategic partnership with MD Robotics, manufacturer of the space shuttle Canadarm and International Space Station robotics, for the development of space lidar systems.

Together, Optech and MD Robotics are designing and building the meteorological lidar system for the 2007 NASA Phoenix Mars mission. The "MET" lidar will analyze the location, structure, and optical properties of clouds, fog, dust and plumes in the lower atmosphere.



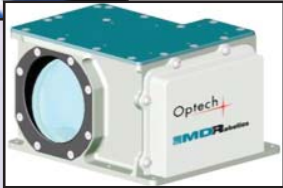
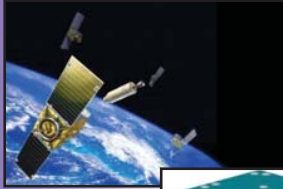
Space Lidar Systems

Advanced lidar systems for planetary exploration and space operations include:

- **Orbital Rendezvous and Docking**

Optech and MD Robotics created the Rendezvous Laser Vision System (RELAVIS) to support autonomous space operations. RELAVIS provides accurate

detection, tracking and pose estimation of spacecraft for rendezvous and docking operations, and satellite inspection and servicing operations.



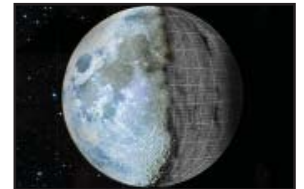
- **Spacecraft Imaging and Inspection**

Optech and MD Robotics are involved in the development of a lidar-based spacecraft imaging and inspection system to increase safety in space.



- **Lunar and Planetary Mapping**

International initiatives have renewed optimism for lunar exploration. A fundamental requirement of advanced missions is an accurate 3D topographic atlas of the lunar surface. Optech and MD Robotics have designed a family of profiling and scanning lidar solutions for planetary mapping.



- **Planetary Landing Systems**

Optech has worked with its partners to develop a hazard avoidance system capable of actively identifying safe landing sites during descent and providing navigational information to spacecraft GNC systems.



Other space lidar applications include:

- Rover navigation
- Earth observation and global monitoring
- Planetary science and virtual geology
- Orbital deployable lidar telescopes.

Atmospheric Lidar Systems

As concerns for protecting our home planet grow, so does the need for new technologies that can help us understand and monitor our complex biosphere. Optech develops custom lidar systems for applications in security and defense-related bio-detection, meteorological measurement and environmental monitoring.



- **Environmental Monitoring**

Optech's ozone DIAL systems are installed as part of the

Network for the Detection of Stratospheric Change (NDSC), an international effort to characterize the stratosphere. Our ground-based installations have operated in: Toronto, Canada, Andoya, Norway, and Eureka in the Canadian Arctic.

Additional atmospheric lidar applications include:

- Homeland defense and security
- Cloud height measurement
- Meteorology
- Remote sensing.

Supporting humanity's exploration of space and the preservation of Earth.



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