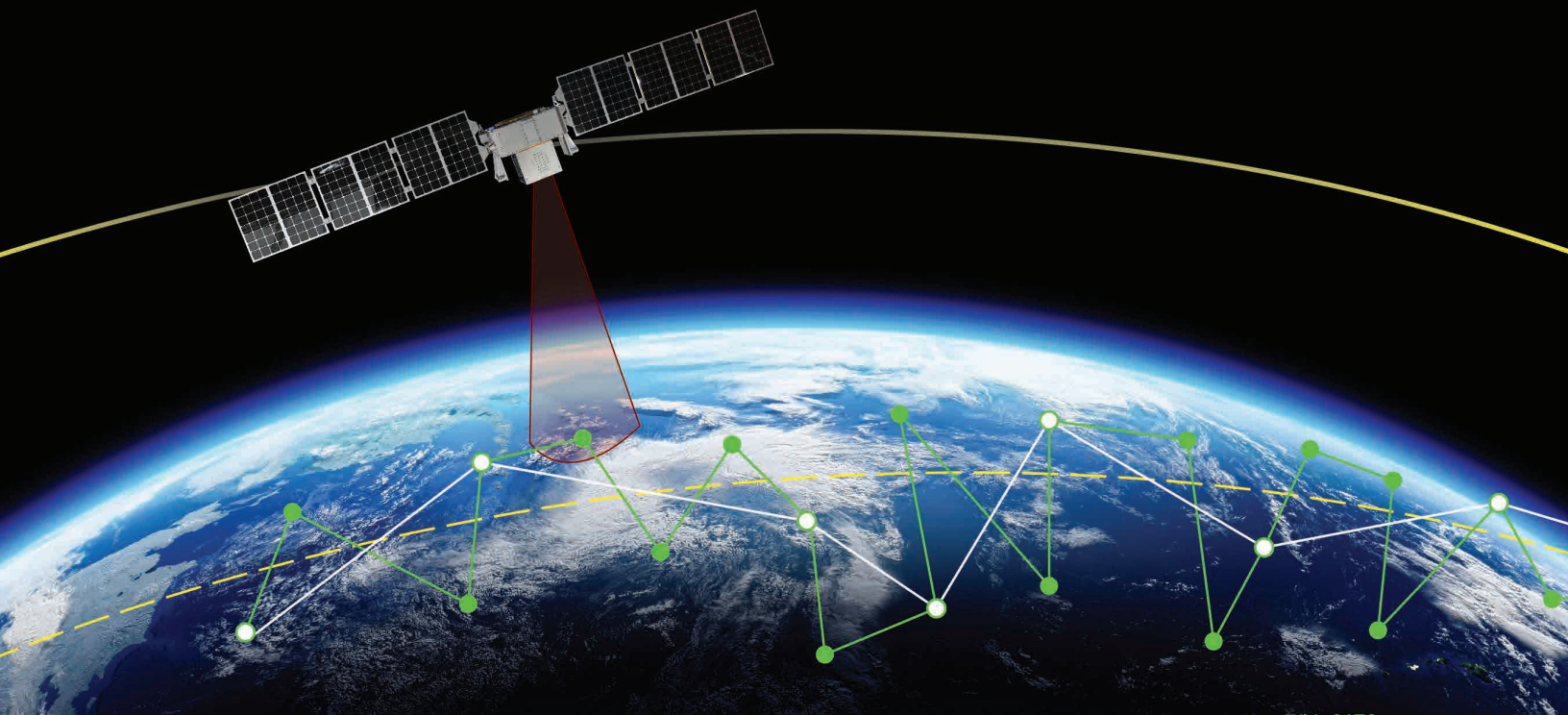


# OPTIMAL ATTITUDE TRAJECTORY SYSTEM (OATS)



**Spend less time maneuvering and more time generating value on your next mission.**

**Take the guessing game out of space maneuverability. Blue Canyon Technologies provides state-of-the-art slew performance to maximize data collection volume, mission capability and revenue generation. Our TRL9 Optimal Attitude Trajectory System (OATS) flight software module autonomously calculates and executes optimal paths that provide the minimum possible slew-settle time.**



— With OATS  
— Unoptimized Slews

## FEATURES

- Reduce your slew and settle times by a factor of two or more
- GN&C agnostic algorithms with zero interpolation error
- Fast and autonomous on-orbit execution
- Configurable to any platform and payload combination

Couple OATS with additional Blue Canyon solutions to enable the most agile missions.

## FACTORS INCLUDED IN OPTIMAL TRAJECTORY CALCULATIONS

- Arbitrary initial and final attitudes, angular rates and accelerations
- Asymmetric mass properties
- Complex reaction wheel (or CMG) performance limits
- "Smoothness" constraints to avoid exciting spacecraft flexible modes
- Additional body rate constraints when desired



## OATS GROUND PLANNING TOOL

- Identical to onboard algorithm
- Fast, simple, standalone executable (Windows or Linux) available

## SPACECRAFT CALIBRATION

- Enables Blue Canyon flight software to further reduce slew-settle durations
- Blue Canyon ground tools and / or services available
- Opportunity to port into autonomous flight software to enable fast / inexpensive constellation deployment

## AUGMENTED OPTION FOR SUN INTRUSION PROTECTION

- OATS can be augmented with sun keep-in / keep-out constraints to autonomously plan maneuvers that maximize performance without triggering fault protection
- Reduces ground operations effort for some mission types

## SMALL CMGS FOR EXTREME AGILITY AND PRECISION POINTING

- Traditional radiation-hard redundant CMG-12
- Commercial radiation-tolerant single-string CMG-8
- These actuators provide a quantum leap in spacecraft agility



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