NIAC NASA Innovative Advanced Concepts

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The Ribbon: Structure-Free, Low-Cost Sail for Solar Polar Observation

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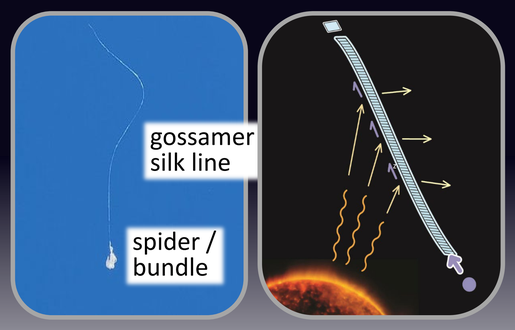
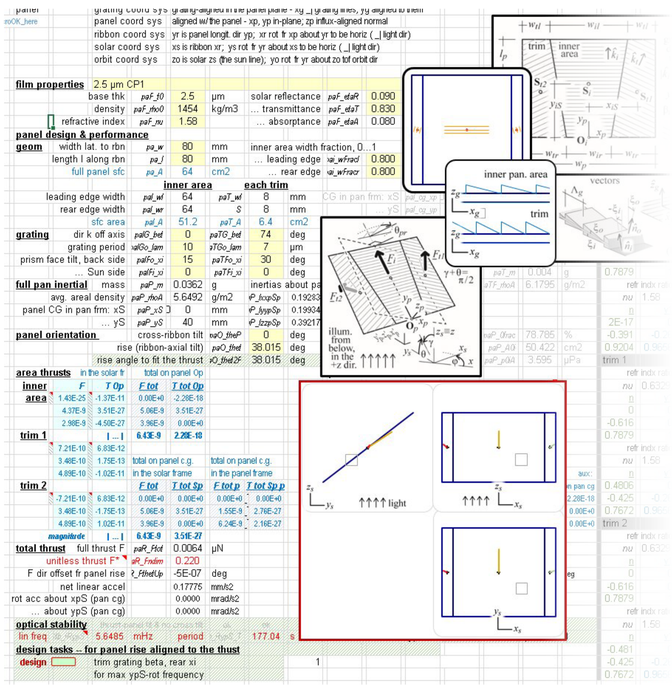
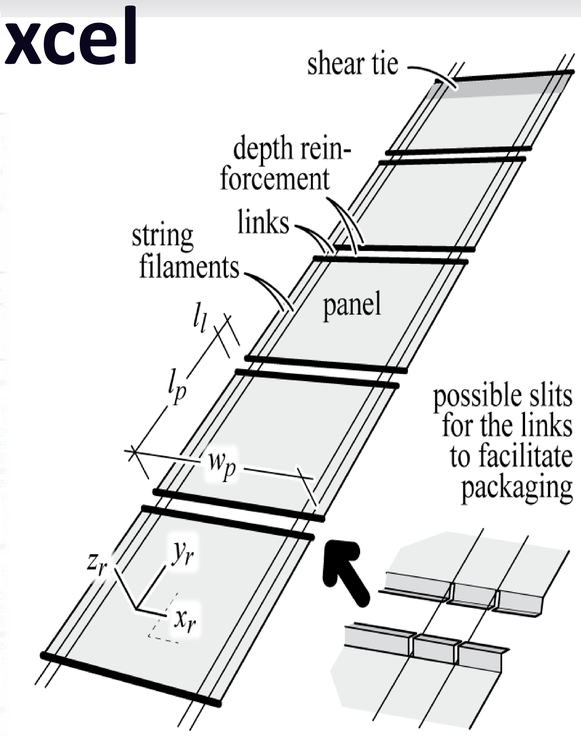
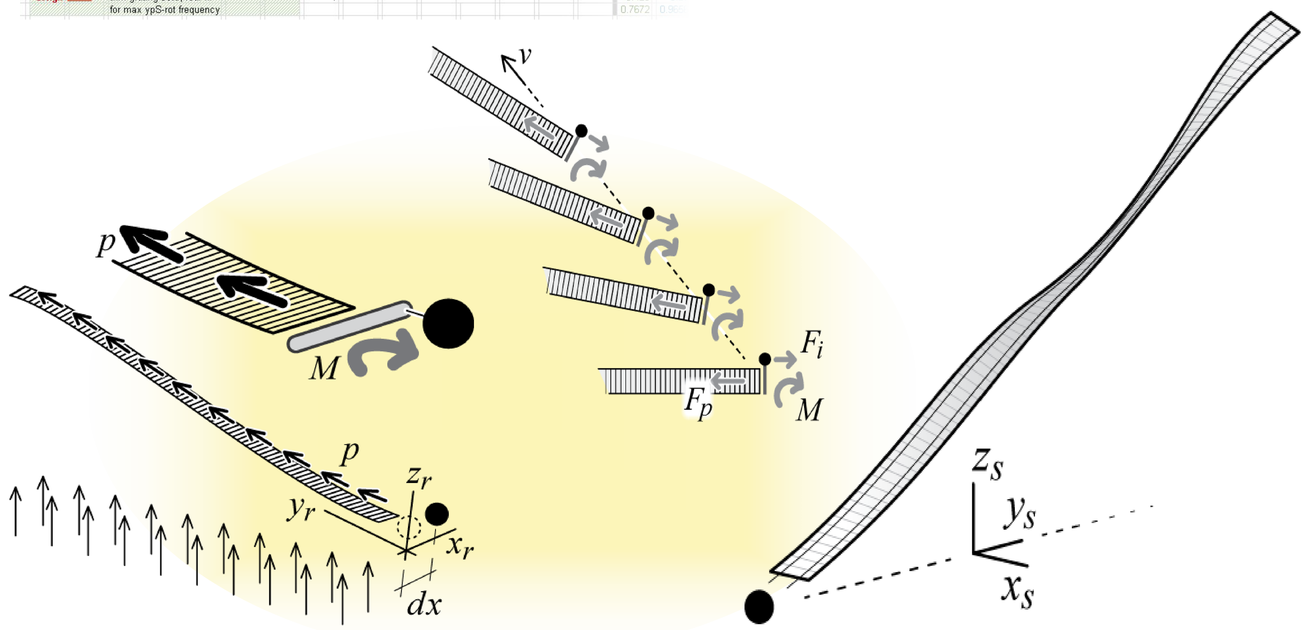


Defined an architecture with steering, developed custom analysis tools, performed optical design, and verified configuration stability

Optical-mechanical design with C++ and MS Excel

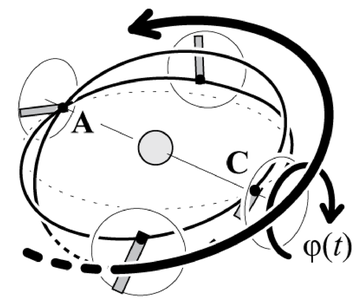


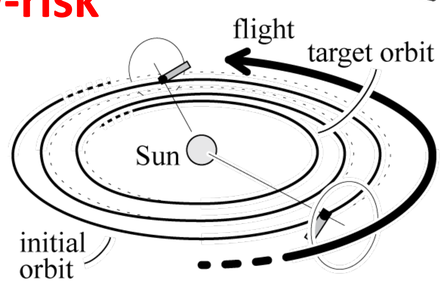




For solar polar observation & other objectives, to achieve:

- Improved thrust efficiencies
- Cheaper, faster missions
- Simplicity
- Unlimited scalability
- Low-cost, low-risk R&D
- Commercial viability





Target: near-term space flight!!

- Configuration stability & optics
- Steering/navigation dynamics & control
- Sensitivity: imperfections, perturbations, mitigation

} accomplished

Short term

Longer term

- Hardware, workshop procedures, & space flight