

Future of Hypersonic Flight Experiments: The Convenience of CubeSats
(Technical Report)

The Balance of National Security,
Commercial Interests, and Individual Privacy
(Sociotechnical Research Paper)

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by

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How can satellites best serve long-term social and environmental needs? The merging of technical design and ethical considerations unveils the answer.

To develop hypersonic glider flight, the researcher team sought the optimal design of a CubeSat to serve as the research platform. A successful design may enhance the understanding of hypersonic flight dynamics, serving applications in aerospace and defense systems. Joining a four-year project in its third year, the research team sought to develop a working CubeSat prototype proving that hypersonic flight experiments can be economical. The research team did not complete a launchable product, but with our finished prototype the final team can complete the project.

In the United States, governments, companies, and advocacies have competed to draw the line between the legitimate and improper applications of satellites to collect data. Competing interests, including security, privacy, and civil liberties, are at stake. Privacy advocates demand regulations to protect citizens' civil liberties, but interest groups in the defense and security sectors resist such demands.