



SOUTHAMPTON UNIVERSITY SPACEFLIGHT SOCIETY

PARTNERSHIP PROSPECTUS

2026 / 27

200+
MEMBERS

6
LIVE PROJECTS

1
MISSION

— Who We Are

Southampton University Spaceflight (SUSF) is one of the UK's largest and most ambitious student-run spaceflight societies. Founded on a single shared conviction — that space should be accessible to everyone — we have grown into a community of **over 200 members** drawn from aerospace, mechanical and electrical engineering, and computer science. We do not just study spaceflight; we build it. Across six concurrent project teams, our members design, simulate, manufacture and test real flight hardware, gaining the hands-on engineering experience that lecture theatres alone cannot provide. In any given year, our teams are firing liquid and solid rocket engines, developing electric thrusters, machining turbopumps, launching CanSats, and building autonomous Mars rovers. Our liquid-engine teams, SULRE and Turbomachinery, have designed and tested the Sverd engine (targeting up to 4 kN of thrust) and the Ceres 1 engine (with a target thrust of 8 kN), both competing at Race2Space; our High-Power Rocketry team flies large solid rockets against other universities at the Mach-X competition; and our newest team, Starworks, is pursuing a propulsive, self-landing vehicle — a milestone only one other European student team has achieved. From competition podiums to static-fire test stands, SUSF turns ambition into hardware.

— Our Mission & Impact

Our mission is to make space more accessible for everyone. We believe that lowering the barriers to the space industry delivers real benefits: it accelerates the development of new technologies, opens exciting career paths for the next generation of engineers, and inspires young people to pursue STEM. Every project we run, every tutorial we host and every school we visit is in service of that goal.

Developing tomorrow's space engineers

Our project teams give students genuine, end-to-end engineering experience — innovation, design, simulation, manufacturing and testing — on hardware that actually flies. The result is a pipeline of graduates who arrive in industry already fluent in the tools and disciplines that aerospace employers value most.

Inspiring the next generation

Outreach has always been central to SUSF. We work with local schools to host model rocket and weather balloon launches, bringing space science to life for hundreds of young people and showing them that a career in engineering is within reach. Our members also represent Southampton at national events such as the UKSEDS National Student Space Conference, raising the profile of UK student spaceflight.

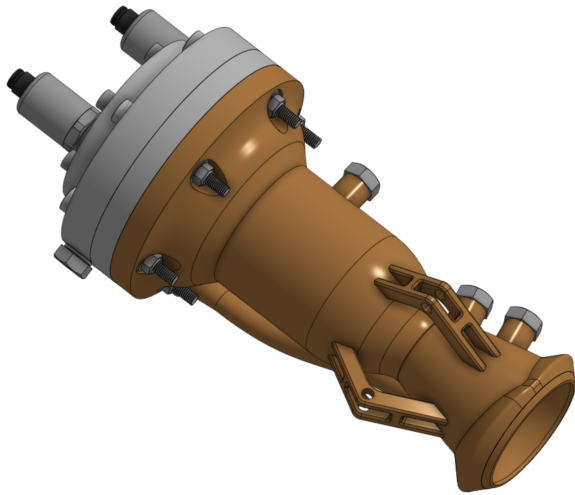
Why this matters now

The UK space sector is growing rapidly and competing globally for engineering talent. The students building rockets in our workshops today are the propulsion engineers, mission designers and founders of tomorrow. **Partnering with SUSF is a direct investment in that talent — and in a more accessible, more ambitious future for spaceflight.**

— Projects

Our six current teams each design, build and test their own flight hardware, pushing the boundaries of what is possible and growing year on year. Projects are retired once their goals are met, and new ones begin whenever an ambitious new idea comes along.

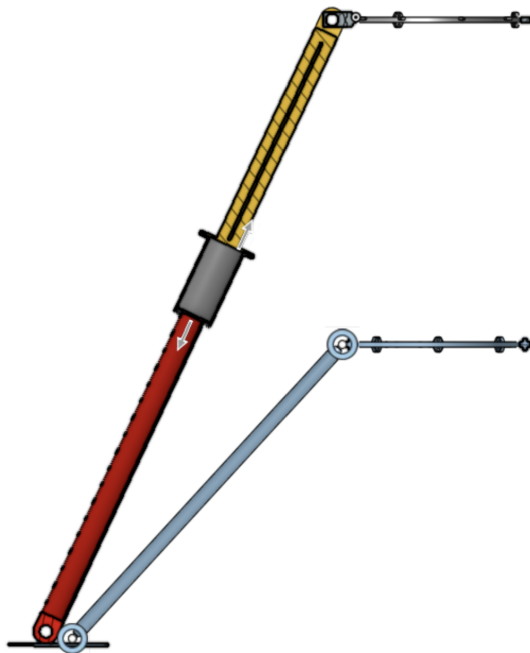
Our newest project is currently developing a propulsive, self-landing vehicle to compete in the Collegiate Lander Challenge, making us one of only a handful of teams attempting such a feat in Europe. It is powered by a 2.5 kN regeneratively cooled bi-propellant rocket engine, designed in-house with throttling and thrust-vector-control (TVC) capability, and brought together in a custom structure with electronics and Guidance, Navigation and Control (GNC) systems. We have made substantial progress across all subsystems, and are aiming for a hop flight in early 2027.



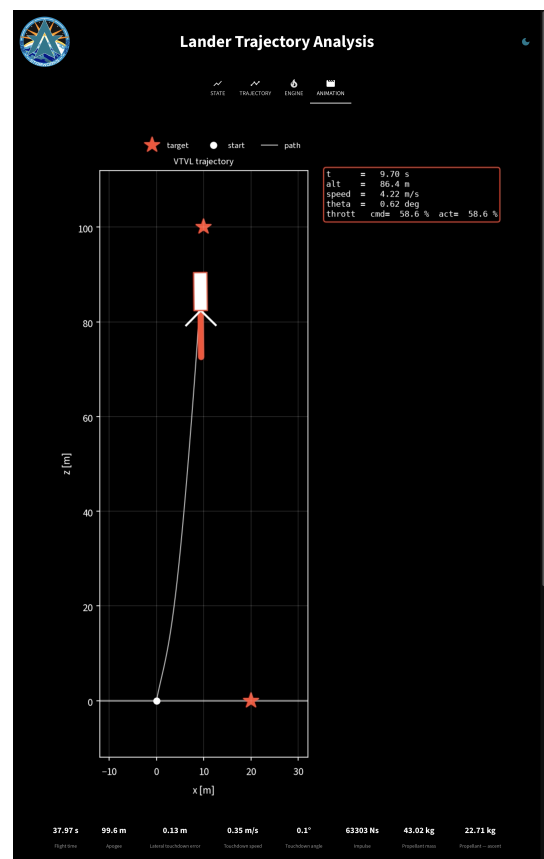
(a) Banshee engine CAD



(b) Actuator arm CAD



(c) Lander leg CAD



(d) Software

SULRE LIQUID ROCKETS

Founded in 2022, SULRE has developed a series of liquid bi-propellant engines with the aim of competing at Race2Space, a UK national competition where student teams test their latest advances in chemical rocket propulsion. Successive Race2Space campaigns drove the development of Scorpio I, Scorpio II and Sverd, all bi-propellant liquid rocket engines with differing characteristics such as thrust and fuel type. SULRE is now in the final stages of developing Comet I, an attempt to fly a liquid-powered rocket in the UK, powered by the Scorpio III flight engine.



(a) Scorpio I



(b) Scorpio II



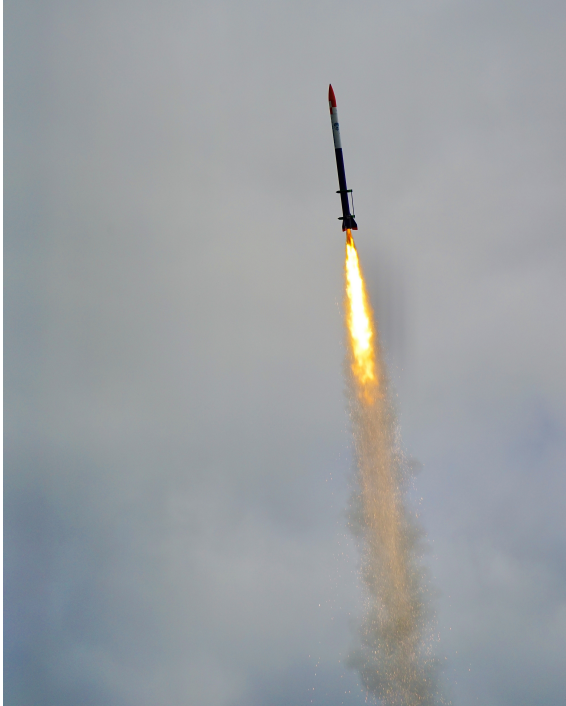
(c) Sverd



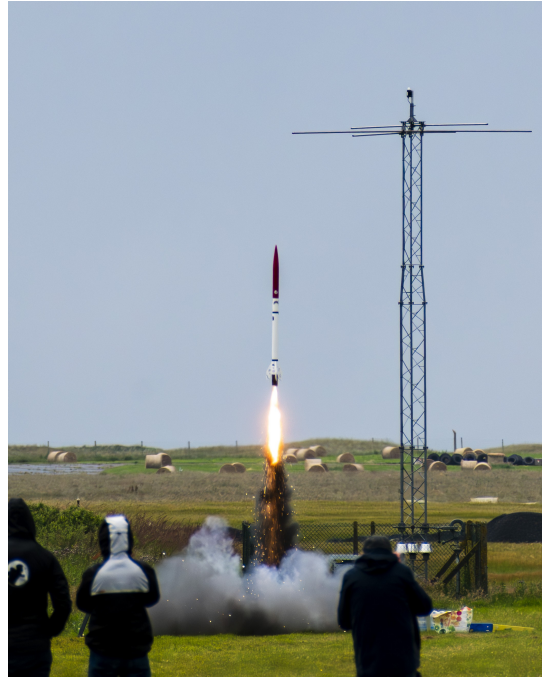
(d) Comet I

High-Power Rocketry **SOLID ROCKETS**

Formed in 2023, our High-Power Rocketry team designs, manufactures and tests solid-powered rockets, competing at the UK national Mach-X competition with a CanSat as payload. Having launched at least one rocket every year since its founding, the team has expanded into two-stage vehicles, this year designing two and achieving SUSF's first-ever two-stage flight.



(a) Angel Interceptor - Mach 24



(b) Hyperion - Mach 25



(c) Prometheus-Atlas Independent Project



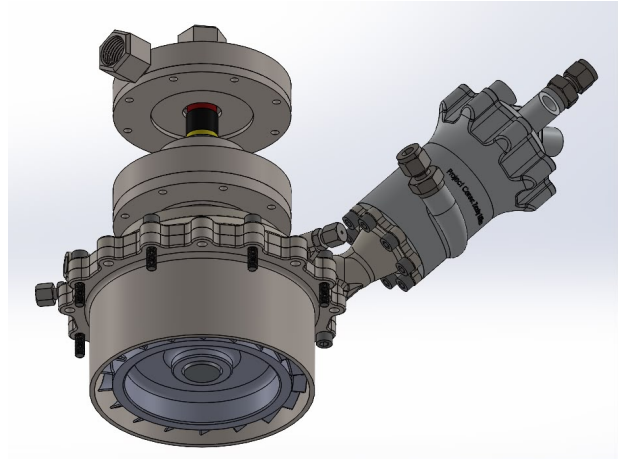
(d) Nemo & Dory - Mach 26

Turbomachinery TURBOPUMPS AND ROCKET ENGINES

Launched in 2024 following the success of SULRE, Project Ceres set out to design and simulate a small turbopump using advanced CAD, CFD and other in-house-developed tools. It has since grown into the development of an electric-pump-fed, regeneratively cooled IPA/LOX engine targeting 8 kN of thrust, which achieved a successful hotfire — without turbopumps — at Race2Space in 2025. This year its pump, turbine and engine teams have made major strides toward the full turbopump system, finalising key components across the impellers, turbine and preburner while passing on core rocket-design skills to new members.



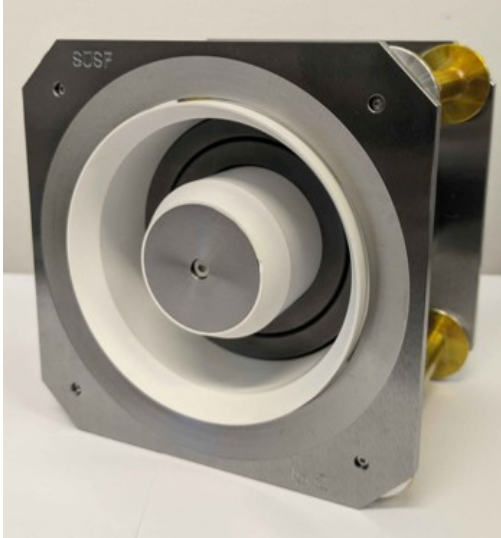
(a) Ceres I



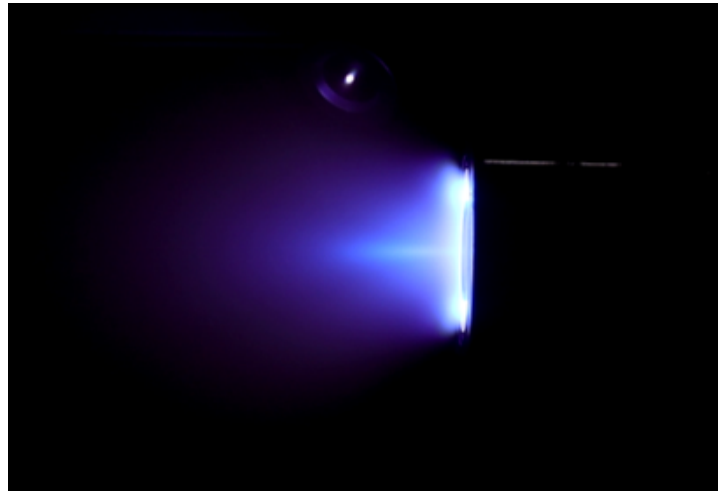
(b) TurboPump Assembly CAD

Electric Propulsion **IN-SPACE THRUSTERS**

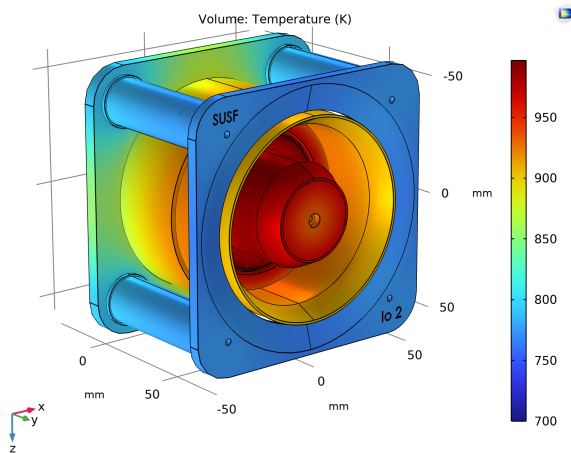
Our Electric Propulsion team designs and builds Hall-effect thrusters (HETs) entirely in-house — high-efficiency engines used to manoeuvre spacecraft in orbit. The programme has advanced quickly, from Io 1 (a 250 W argon thruster) to Io 2 (a 1 kW argon-optimised thruster now ready for testing), and on to Zeus, a magnetically shielded, zinc-fuelled thruster. Alongside the hardware, the team runs a lecture and tutorial series in electric propulsion and plasma physics, and helped establish the Student Electric Propulsion Consortium.



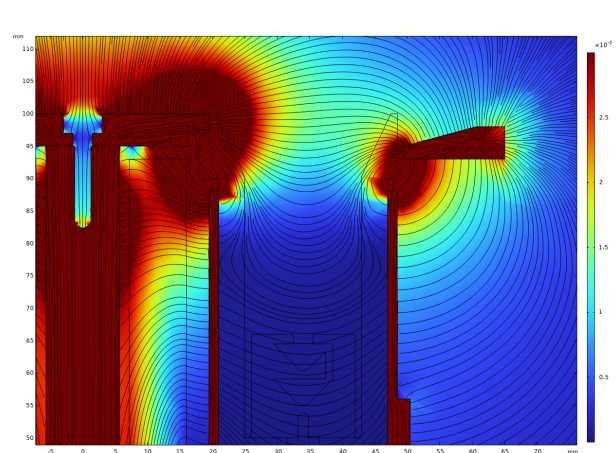
(a) Io 1



(b) Io 1 test



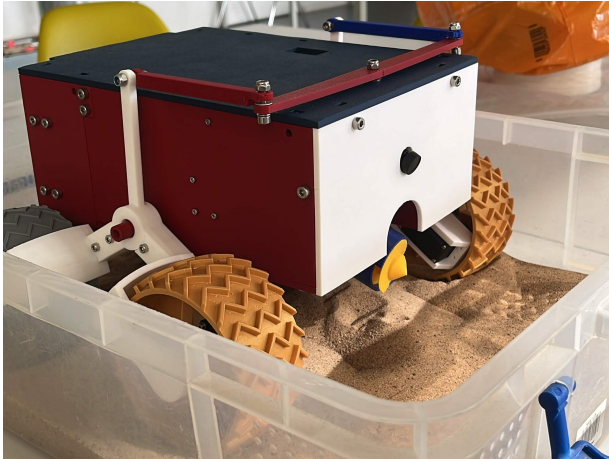
(c) Io 2 Magnetic Field



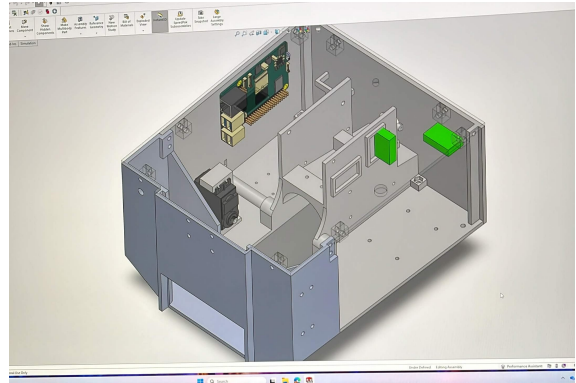
(d) Io 2 Thermal Analysis

Mars Rover **AUTONOMOUS ROVERS**

Our Mars Rover team designs, builds and operates a rover to compete in the advanced stream of the Olympus Rover Trials, a national competition run by UKSEDS, in which university teams build a rover to a demanding specification and complete a set field task - this year, collecting and depositing sand samples under strict weight, footprint, dual-communication and safety requirements. The team contains multiple sub-teams, giving members a genuine end-to-end experience of a complex robotics project. Our goal is to become a consistent competitor — refining the design year on year and integrating new automation features.



(a) 2026 Rover



(b) Rover body CAD

— Outreach

Making space accessible to everyone starts in our own community. We dedicate part of our time to organising rocketry and spaceflight workshops, talks and hands-on activities for local schools and the public, with the goal of improving engagement with spaceflight and inspiring the next generation of engineers.

Over the past year, our team took part in the Cantell School Horizons fair, ran an activity at the Southampton Science and Engineering Festival (SotSEF) Engineering Day, mentored a school team competing in the UK Youth Rocketry Challenge (UKROC), and delivered a weather-balloon activity with Walhampton School for their STEAM fair. In 2026/27 we plan to return to these events and expand our outreach to new ones.



(a) Weather balloon launch



(b) Weather balloon at 30 000ft

— Partnership Opportunities

Partners can support SUSF in various ways, including through three different sponsorship levels. Benefits are cumulative — each tier includes everything in the tier below it.

	BRONZE £500	SILVER £1,000	GOLD £2,000+
Brand visibility	Logo on our website	Logo on team kit & one project's hardware	Logo on all airframes, launch livery, this prospectus & event banners
Recognition	Dedicated social feature	Dedicated social feature every 2 months	Named as a headline partner across our channels
Access	—	Early access to test / launch footage and data	Behind-the-scenes progress updates & priority access to projects

Material Support Materials, machining, electronics and software are valued at retail toward any tier.

Individual Approach A fixed tier may not suit your company's goals. That is why we take an individual approach — every sponsorship is handled, tailored and adjusted to best fit your organisation.

— Where Your Support Goes

Every contribution goes directly into building hardware, testing and outreach. Whether your support comes as store credit, equipment, financial backing, or logistical help, it lets us bring our projects to life, keep them flying, and train the next generation of engineers. To find out exactly what your sponsorship would make possible or has made possible already, contact us at susf@soton.ac.uk.

— Get in Touch

Ready to talk, or want to explore a tailored partnership? We would love to hear from you.

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