SPONSORSHIP PACKAGE 2022-2023

MCMASTER ROCKETRY

www.macrocketry.ca

rocketry@mcmaster.ca

ABOUT THE TEAM

A non-profit, **student-run** team providing a venue for McMaster Engineering students to **design**, **build**, **test** and launch rockets with innovative payloads while following engineering design & safety principles. We currently have over 40 active members and we have **successfully launched our first solid** rocket in the Launch Canada Competition!

rocketry@mcmaster.ca

WHY SPONSOR US?

Networking Opportunities and Talent Acquisition:

- **40+** top undergraduate and graduate students from the department of software, mechatronics, mechanical, and engineering physics

Advertising, Exposure, and Outreach:

- Launch Canada: **900** tech-minded students and professionals
- Spaceport America Cup: **1,700** skilled students and professionals
- McMaster Student Body

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SPONSORSHIP TIERS

BASIC

$1000+
CONTRIBUTION

- Logo placement on the **website**
- Featured social media **posts**

INTERMEDIATE

$2500+
CONTRIBUTION

- Logo placement on the **website, banner and rocket**
- Featured social media **posts**
- Access to **resume book** and **project database**

PARTNER

$5000+
CONTRIBUTION

- Logo placement on the **website, banner and rocket**
- Featured social media **posts and sponsor introduction video**
- Access to **resume book** and **project database**
- Team **recruiting events**
- Plus any other benefits you are looking for!

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Watch me!

Mission

Made to compete in **Canada's first** national **HIGH POWER** rocketry league, Marauder I sets a historical milestone in McMaster's **undergraduate aerospace** research, reaching a target **apogee of 3km**.

Height	2.54m / 100in
Diameter	16cm / 6.3in
Wet Mass	33.7kg / 74.4lbs
Payload Mass	5.4kg / 12lbs
Motor	Cesaroni 10367N1800-P
Total Impulse	10600Ns
Maximum Velocity	260m/s / 853ft/s

Aero-Dynamics

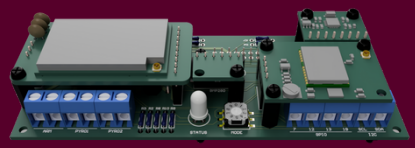
Flight Simulation

- Used **OpenRocket** to study the aerodynamic behavior of our rocket
- Used **SOLIDWORKS 2020 Flow Simulation** to examine the air flow around **critical** parts of the airframe such as the **nosecone**, **Fins** and **fuselage**.

Fins

- **Carbon fiber** (3mm thickness)
- **Distorted trapeziod** geometry to pull the CoP back
- Attached to the airframe using **epoxy fillets** (1:5 hardener to resin with added filleting material)

Avionics



Designed a **custom PCB** and a **communication protocol software** for the avionics bay

E22-900M30S

- 915 MHz Long Range Radio (LoRa)
- 30 db transmission power
- 62 kbps max bandwidth

MPU6050

- 6-axis inertial measurment unit
- 1000Hz sampling rate
- 16 g max acceleration

Neo-7M

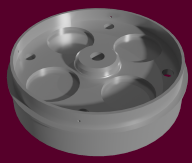
- GNSS recievers, supporting GPS, GLONASS, QZSS, SBAS
- Two-meter accuracy

VoidLake Protocol

- Our student-developed **communication protocol software**

Airframe

Optimized Bulkheads



- **FEA-assited** design
- Machined in-house out of **Aluminum 6061 T6.**

Nosecone

(student Modified)

- **HAACK Series 1:4**
- **Fiberglass (Off the shelf)**
- Tip of the nosecone was **machined in-house** out of **Aluminum 6061 T6**

Launched in August 2022
Cochrane, Ontario

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LAUNCH CANADA COMPETITION

Launch Canada is Canada's first ever **national major rocketry competition**. It offers an opportunity for Canadian rocket teams to come together and **launch high powered rocketry projects** and is a chance to meet with other teams and fellow enthusiasts. Teams will be launching solid, liquid and hybrid rockets from **3km to 10km in altitude** and discussing and presenting their technical designs. The competition will take place in **August 2023**.

Learn More

rocketry@mcmaster.ca

CONTACT US!

Website

Email

LinkedIn

Facebook

Instagram

Please send us an email (rocketry@mcmaster.ca) if you are interested in learning more about sponsorship and we would be happy to arrange a meeting to discuss with you.