

# Launching The Indian New Space Movement

Indian Space Research Organisation (ISRO) has led India to become one of the pioneers in space technology. As space technology becomes more democratized, India will have to reinvent itself and make our space program more agile, faster, cheaper and entrepreneurial. Join the Rocketeers Newspace Movement to become a part of this and help India achieve global leadership in space technology.

# Why Now.

- The world of space technology is changing very fast with cost of access falling by more than a factor of 10X in the last 5 years.
- ✓ India will need more than 2,00,000 highly skilled space technology engineers in the next 10 years.
- We need to create a large human resource pool and a thriving newspace ecosystem to lead as a space tech nology pioneer.
- Join the Rocketeers Newspace India Movement.









# What We

We are working to build the model rocketry ecosystem of India.

Rocketeers provides turnkey educational solutions incorporating experiential (hands-on) learning, STEM education, scientifically designed curriculum, experiments and projects to students and educational institutions across the country.

#### ROCKETEERS SPACE TECHNOLOGY LAB PROGRAM

Build customised labs based on the needs of the institute or educational space. Introduce students to the wonders of Model and Amatuer Rocketry, Cansats & Cubesats, Space Technology and Sciences.

#### ROCKETEERS MODEL ROCKETRY CLUB PROGRAM

Introduce students to the world of Model and Amatuer Rocketry with access to Payloads, lots of experimental components and hardware, propulsion systems, mentorship and DIY Kits. Interact and collaborate with clubs across the country to contribute and compete with the ecosystem.

#### "ROCKETEERS RESEARCH INSTITUTE"

We provide Plug and Play educational programs for students, institutions and businesses that can be deployed without disrupting any of the normal activities of the institution or the company. Our programs and activities are enabling us to create a platform providing such students with a step by step path to become the spacecraft builders of tomorrow irrespective of their location and formal education. We will give students across the country the very tools they need to learn, build and develop their abilities and skills to become rocket scientists, who will now go on to colonise Mars and newer frontiers than ever before. India is one of the leading space faring nations of the world. As ISRO supports more and more privatisation and asks for support from the private industry, Rocketeers is building the much-needed ecosystem that acts as the primary growth driver and talent pool for this industry.

Our secret Sauce/USP is our curriculum and content design philosophy called Experiential Learning We have inculcated into our curriculum experiential learning of an ever increasing plethora of industry professionals, Experts, Academics, Scientists and NewSpace pioneers. Incorporation of their experiential case studies, has made our curriculum highly industry relevant and oriented. It also keeps it updated with latest best practices in space tech. For our Cubesat curriculum, we are already consulted over 30 ISRO scientists and more than 20 private space industries.



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The children today live in beautiful times. Within their lifetimes, they will see not only the first human landing on our celestial neighbour, but also our efforts to set up human habitat there. They live in a world where space science is enabling technologies and applications never imagined before in sectors such as agriculture, communication, data analytics, disaster management and prediction, energy, travel and tourism and many more. Not only will the students of today see these technologies in their lifetimes but they will be the ones driving them as we build more and more capacity to access space. They live in an exploratory age which has arrived again after almost 400 years.

To bring the dream of space closer, to take students to the age of rockets, satellites and space travel; to build a world where space is as accessible as our skies; to build these technologies and more, we are creating first of it's kind platform in the country for enthusiasts, students, scientists, engineers and entrepreneurs.

Our Motto

## Rocket Science in every Classroom

With our aim to create this ecosystem, we are building an access portal to space technology for the masses, to democratize space technology and make access universal.



- May 2016 First Rocketeers Model Rocketry Workshop
- January 2017 Awarded Top Technology Startup by Times of India
- June 2017 5000 successful Typhoon model Rocket flights
- September 2017 Nominated by NITI Aayog to India International Science Festival
- October 2017 Nominated by DIPP as Top 80 Indian Startups at GES -2017 showcased to Hon'ble PM Shri Narendra Modi and Ivanka Trump
- December 2017 10000 successful Typhoon model rocket flights
- January 2018 Awarded Runner up at ET NOW and Lufthansa Runway to Success aired on ET Now (Oct 2017 - Jan 2018)
- May 2018 15000 successful Typhoon model rocket flights.
- July 2018 Launched India's first completely indigenised range of model rocketry Motors, Components and DIY Kits.



#### **DIVYANSHU PODDAR**

BTech in Aerospace Engineering from the Indian Institute of Space Science and Technology. He is the founer and CEO for Rocketeers. He established the first Model United Nations chapter of Kerela and has been a core committee head for finance and publicity for the technical fest at IIST and has worked in the team of Chandrayan - II for a short period of time



#### **AKASH EKKA**

An aerospace engineer from Indian Institute of Space Science and Technology. He is responsibe for development, design and manufacturing of motor engines used in model rockets and currently developing motor engines from medium and high powered rocketry. He has worked on joint efficiency of super alloys employed in a rocket engine combustion chambers at ISRO propulsion unit.





DR. B. N. SURESH

PRESIDENT, INDIAN NATIONAL ACADEMY OF ENGINEERING DELHI,
HON DISTINGUISHED PROFESSOR, ISRO HQ,
FORMER DIRECTOR, VIKRAM SARABHAI SPACE CENTRE, VSCC,
FOUNDER DIRECTOR, INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY, IIST
FORMER MEMBER, SPACE COMMISSION

Dr. Byrana Nagappa Suresh, an aerospace scientist. served as the first Director of IIST. He was the Director of Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram during the period 2003-2007. He is known for his contribution to Space Capsule Recovery Experiments (SRE). He retired from IIST in November 2010. Presently he is serving as Vikram Sarabhai Distinguished Professor at ISRO Headquarters since November 2010. He was also distinguished Professor at IIT, Mumbai and MIT, Manipal.

He has been honoured with several awards for his significant contributions in the field of Space Technology.



ANIRUDH RASTOGI

FOUNDER AND MANAGING PARTNER PARTNER - TRALAW LLM - HARVARD LAW SCHOOL



DR. KURIEN ISSAC

DEAN - IPRCE, ISST FORMER HOD - DEPT. OF AEROSPACE ENGINEERING, IIT BOMBAY



MR. J S MANN

HONOURARY TRUSTEE - IPSC FOUNDER - THE MANN SCHOOL A highly powerful, specialized and safe DIY learning tool that allows students to learn a large variety of topics through actual hands on experience.

- ✓ A model rocket is a small solid fuel (Black Powder/APCP) powered rocket that is designed to reach low altitudes (100 to 500 metres) and can carry small payloads and be effectively recovered by a variety of means.
- Model rocketry allows young people to safely make flying rocket models without having to construct dangerous motor units or directly handle explosive propellants.
- Model rocketry has been credited as a significant source of learning, especially for school children and for enhancing their interest in the field of science and technology.

#### "A Path to build for Space"

#### **Rocketeers Model Rocketry Clubs**

- Build and fly Model Rockets and payloads
- Learn from industry veterans using Open Online Masterclass and
- Certification Programs
- Collaborate and Compete with Rocketry Clubs across the country
- Become a part of the Rocketeers Model Rocketry Community

#### Rocketeers Space Technology Labs

Learn with veterans at Rocketeers Space Technology Labs
Open Online Masterclass and Certification Programs
Access to space based data
Ideate, design and build rockets, payloads, spacecraft, applications and services

Fly at Rocketeers Flying Zones

Become a part of the Rocketeers Newspace India Communit

#### A Space To Build For Space

Understand the Newspace Industry, Business and Regulation.

Access to Flagship Rocketeers Labs, Facilities and Mentors and More.

Ideate, design, build and validate your idea in space or with actual users.

### 8 Benefits

#### Young Learners and Enthusiasts

- Flying Model Rockets A highly immersive DIY hands on learning experience
- Student Ambassador Program Become an influencer and get freebies and merchandise
- Ideate, design, build and fly amatuer rockets in events and competitions across
   India and Internationally
- Learn Space and Rocket Science and build your skillset with Open Learning
- Large amount of internship and community learning opportunities
- Become a part of the Newspace India Community
- Learn about Space Industry and Regulation

#### **Faculty and Mentors**

- Faculty Ambassador Program Become an Educational Influencer and get freebies, travel opportunities and merchandise
- Get featured on Rocketeers website as pioneering mentor
- Access and participation to a national network of opportunities, events, conferences and awards
- Access to Rocketeers Faculty Resource Content
- Various opportunities to contribute Rocketeers' international programs as well

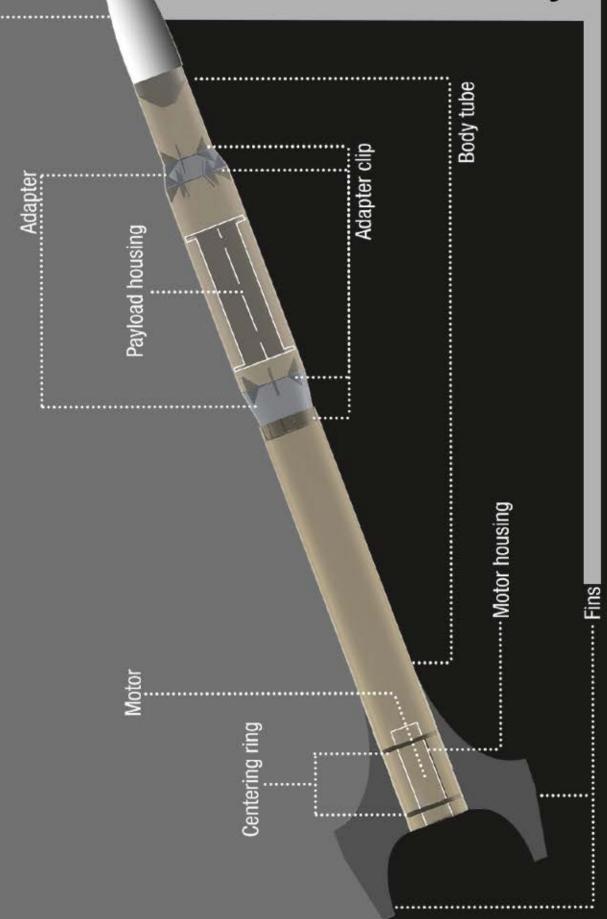
#### Schools, Colleges and Institutions

- Become flying zones and community nodes for the budding indian newspace industry
- Gain formidable competitive advantage in using DIY technologies to set standards for hands on higher education
- Opportunity to pioneer space technology education in the era of Newspace
- Connect students to opportunities in the Newspace industry in India and abroad with access to industry mentors
- Reap benefits of being early adopters with a low and slow investment program

#### **Educational Ecosystem Builders and Service Providers**

- A completely new tool for education and learning pioneer and support model rocketry education in India
- Get access to support and consultancy from Rocketeers to grow Model
  Rocketry ecosystem around you and improve direct brand recognition for you
- Setup Rocketeers Flying Zones in your education space
- Get featured on Rocketeers social media and outreach platform as ecosystem builders to improve your direct market outreach
- Collaborate with organisations across India and internationally

### **Model rocket assembly**

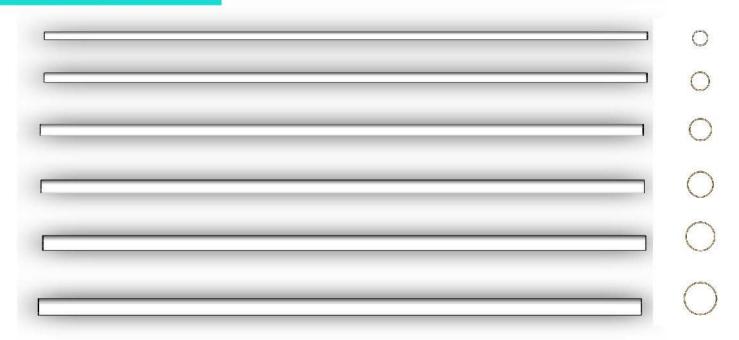


Nose cone .....



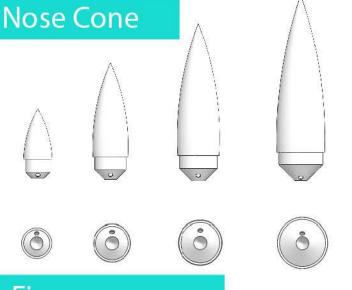
### 9 Sulk kit Components

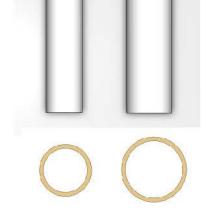
#### **Body Tube**



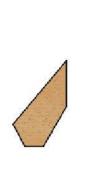


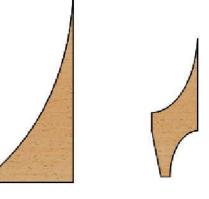
#### **Motor Housing**













#### Short and Tall adapter

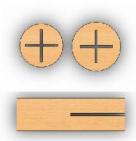
#### **Centering Ring**

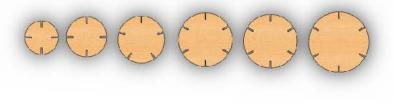




#### Payload Housing

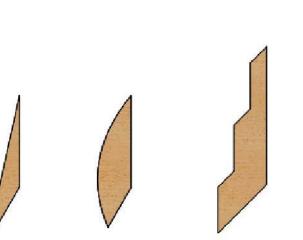
#### Adapte Clip



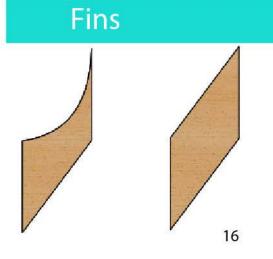












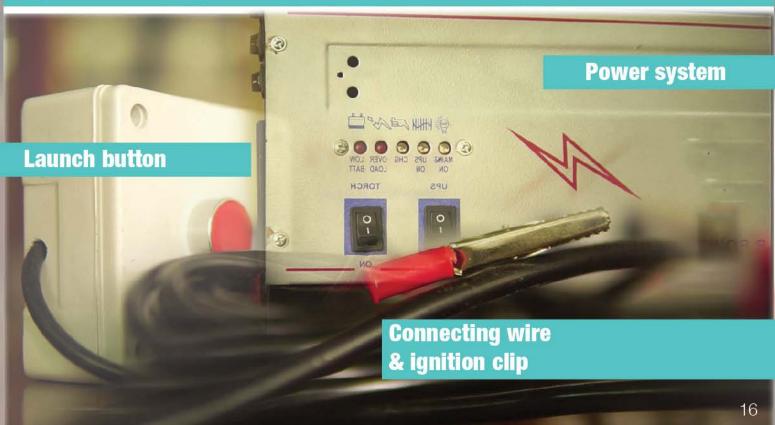




- Rocketeers class B motors
- Rocketeers class C motors



#### **Ignition** system



## ROCKETEERS @EVENTS

#### Rocketeers Model Rocketry and Cansat Workshops -

A premium highly immersive DIY model rocketry experience coupled with scientifically designed curriculum delivered by a space technology veteran and model rocketry enthusiast.

- Available from Class 5th (10 Yr Old) to B. Tech Levels
- Rocketeers education partners also available in various regions to conduct similar events.

#### Model and Amatuer Rocketry Demonstrations -

Ignite the minds of students with live demonstrations of flying rockets delivered by young rocketry enthusiasts and rocketeers community members.

Conducted as community events

#### Seminars, Talks and Video Conferencing Sessions -

Connect with a vast range of industry mentors, academicians and scientists from the Rocketeers Community to deliver highlyinsightful and educational lecture sessions.

Rocketeers acts as facilitator and enabler only

#### **ROCKETEERS @INSTITUTION**

#### Rocketeers Model Rocketry Clubs -

The community node centres where the action happens, early rocketry clubs will go on to become legacy organisations encouraging and enabling ideas, projects and inspiration about space technology and sciences. These will create the maximum impact as they encourage young students to take up science and engineering. As a part of being the host to a club, institutions will get a chance to be a part of a new kind of community creating a highly effective DIY education driven environment.

#### **Rocketeers Space Technology Labs -**

The key to the Rocketeers Newspace movement, these labs will become the breeding ground for space technology ideas, augmenting these ideas with mentors, facilities, and industry will provide students, enthusiasts and entrepreneurs with the direction and support needed for them to take their ideas from minds to laptops and then from laptops to reality.

#### **Rocketeers Space Technology Courses -**

As the space technology industry grows, India will need to complement our activities with the inclusion of space technology and related topics into the formal education system. To do this, Rocketeers consults on curriculum development for cutting edge topics like Aerospace Medicine, Space System Quality, Space Law and Regulation, Planetary Engineering, Systems Engineering and so on.

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### ROCKETEERS FACULTY AMBASSADOR NETWORK Become a flying zone

#### Requirements

- Ground (40m \* 40m)
- Highly Motivated Faculty Ambassador
- Pragmatic & Futuristic attitude

#### **Benefits**

#### Personal

- Get listed as Rocketeers faculty ambassador on our website & social media.
- Get access to Rocketeers training, learning & teaching tools for practical STEM education.
- Become local educational influencer.
- Chance to get extra incentives by achieving the number of flight milestones.
- Generate personal income by generating a rocketry community.
   Institutional
- Get a Launcher & Ignition system for free
- Introduce students to model rocketry at no charge.
- Become hub of model rocketry in your region.
- Send students to participate in domestic & international rocketry competitions.
- Get marketed on Rocketeers social media platforms as pioneering institutions in model rocketry.
- Gain prestige in Indian and global new space industry.

#### Responsibilities

- Conduct model rocketry flying session every alternate Sunday evening.
- Store & sell model rocketry fuel cartridges (to be used in flying zone premises only; Carry home not permitted)

#### **Financials**

- List yourself free of charge
- First 20 rockets free
- Flying zone receives incentives for every flight and operations.
- Additional incentives on achieving number of flight milestones. (US Trips, Mobile phones, Discount / Gift Cards etc.

