



I want Space when I
grow up

Aloisia Russo
R&D Engineer
of **Oxford Space Systems**,
Committee Member
of **WIA-E Rome LG**

At a glance

- Who I am
- Why lack of Women In Aerospace
- Space not just for STEM
- Amazing women in the Space Sector
- In-house rocket with just water
- Can we programme a lunar lander?

To be **the** global leader in **deployable antennas** for **Space**



✓ Reduced Complexity



✓ Stowage Efficiency



✓ Mass Savings



✓ Cost Effective Solutions



Addressing the market trend
for better performance from
smaller platforms

World Space Week 2021



DEPLOYABLE ANTENNA PRODUCTS AND APPLICATIONS

Yagi



Maritime tracking

Helical



Internet of Things
Satcom

Wrapped Rib



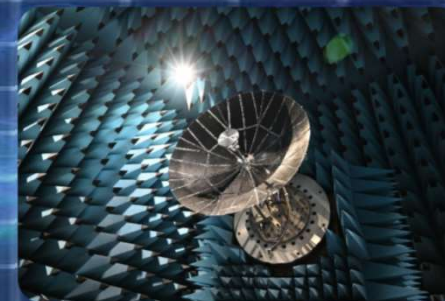
Synthetic Aperture Radar (SAR)

Offset



Telecommunications

Hinged Rib



Intersatellite links

SIGINT

VHF

UHF

L-band

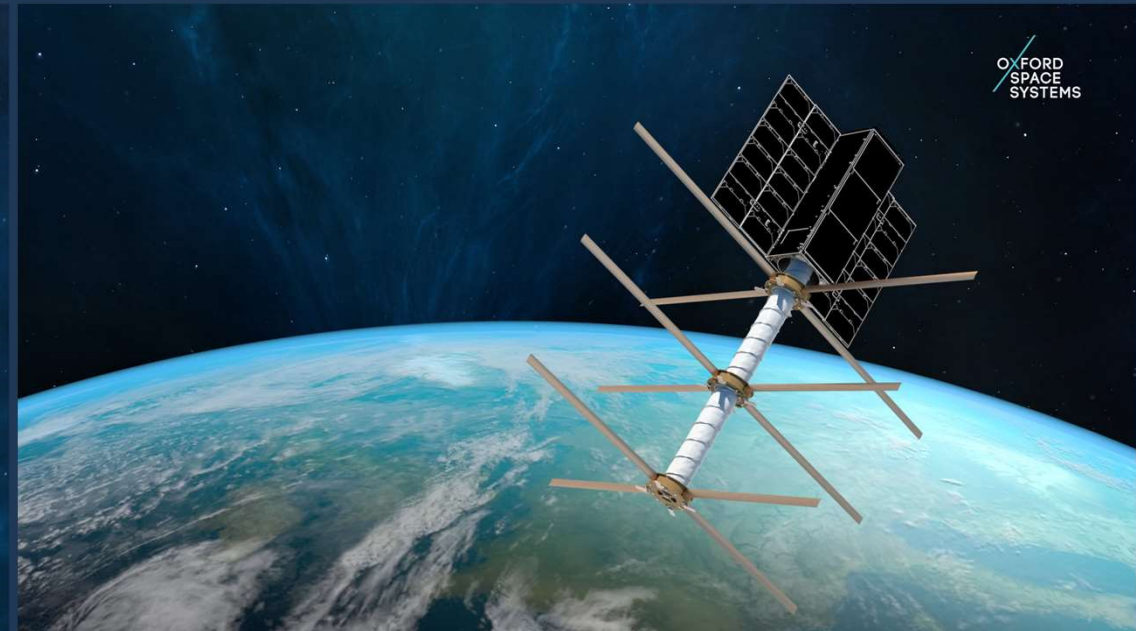
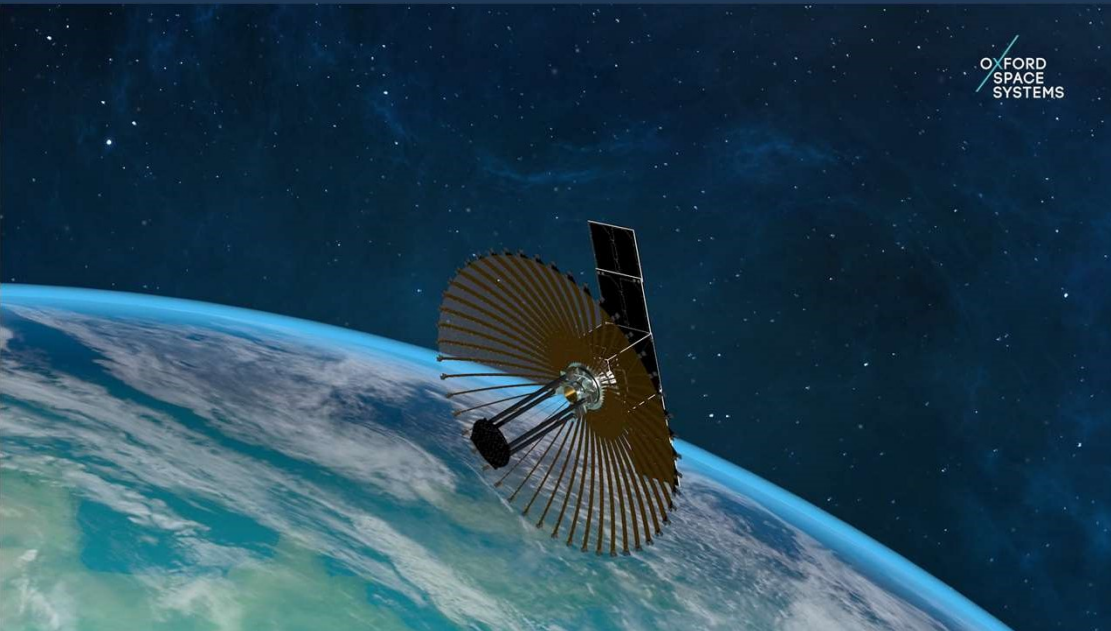
X-band

Ka-band

Q/V-band

Navigation

Deployable antennas video

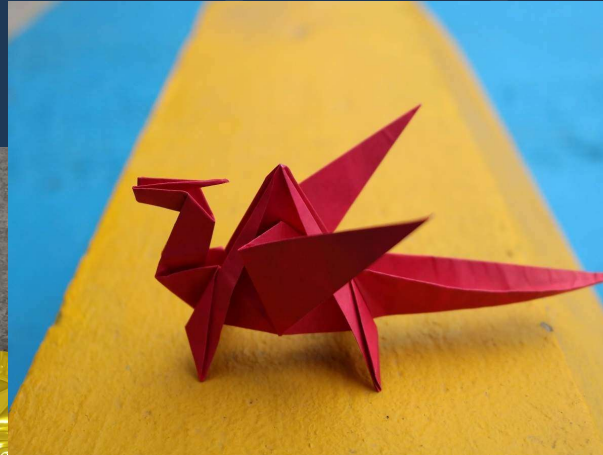


My specialization: Space Origami Engineering

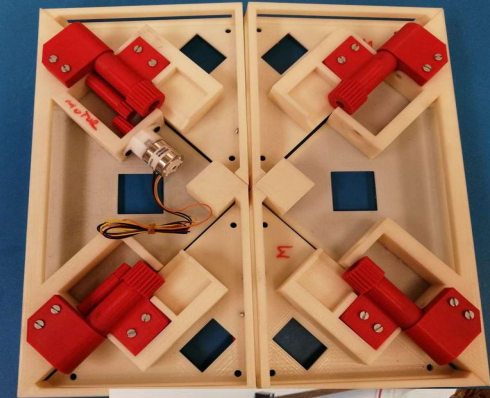
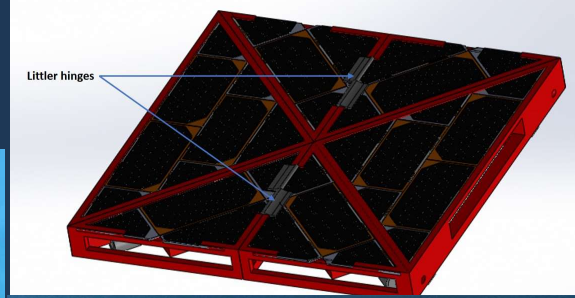


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UNIVERSITY OF
LIVERPOOL



USC University of
Southern California

Information Sciences Institute

Women in Aerospace Europe – Rome LG (<https://www.wia-europe.org/>)

IAC-18-E-5-5-3

Gender Equality in the European and Italian Space sectors: a study case of the WIA Rome Local Group

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Abstract

In the last decade, the gender equality and empowerment of female professionalism have been indicated as a fundamental driver for the economic growth by the European Union (EU), and it has been recognized also by a resolution adopted by the United Nation (UN) General Assembly on the 25th of September 2015.

In Europe, even though progress towards gender equality have been made, data based on the Gender Equality Index show that the process is rather slow. Each Member State faces obstacles in achieving gender equality and significant improvements are still needed to attain gender equal societies. The participation of women in employment remains much lower than the one of men and labour markets across EU Member States show persistent and significant gender segregation. Governments should support more and encourage the presence of women in Sciences, Technology, Engineering and Mathematics (STEM) fields, generating new inputs from a diverse workforce. The space sector is a source of inspiration and opportunities for all generations but it is affected by gender discrimination in the workplace in terms of equal pay and career progression too. In large firms, a campaign to have women in the board has been started, although at a very low rate. In the small firms, there is still a low presence of women at high level positions. The situation in the research institutions does not differ consistently from the industrial world. Indeed,

Nations General Assembly, several international programs have been promoted to encourage a gender-inclusive environment, especially in Science, Technology, Engineering and Mathematics (STEM) fields. In this framework, the Rome Local Group (LG) of Women in Aerospace Europe (WIA-E) is collaborating with other international aerospace organizations to promote Gender Equality principles. In particular, WIA-E Rome LG analysed the Gender Equality condition within STEM fields, focusing on data provided by the Italian Space Agency and outcomes from prior studies on the Italian academic and industrial aerospace fields and at European level. The results of this study were presented at the IAC 2018. As next step, WIA-E Rome LG started a cooperation with the Japanese women in aerospace organization (Sorago) and UNISIC Global to overcome regional barriers and to promote activities for increasing the general awareness about dynamics and spatial challenges of gender equity, recognized as fundamental for the professional development. As result of this cooperation, this paper aims to describe the innovative approach adopted to investigate how a different cultural environment could affect the perceptions about Gender Equality of the aerospace workforce, including professionals, researchers and students, to eventually identify the unconscious bias and highlight possible causes. Consequently, the rationale and the methodology defined to carry on this research are detailed. Moreover, the paper describes the results and outcomes obtained from the analysis of data collected during the dedicated "Gender Equality in Space Field" Panel Discussion, organized in December 2019 in Japan, and the one to be organized within September 2020 in Italy. Indeed, an electronic survey is used to investigate the participants' perspectives to characterize similarities and differences between these two cultures. A better understanding of personal perspective and opinions about Gender Equality is fundamental to define a suitable strategy aiming at proposing solutions to address gender inequality issues and support the future space workforce development in both countries. Pursuing a culture of equality will allow the space community, and therefore the STEM one, to advance and thrive in the aerospace workplaces, thus leading to sustainable, long-term economic growth.

1st International Astronautical Congress 2020

Paper ID: 58815

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1) Interactive Presentations - IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)

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CROSS-CULTURAL ANALYSIS ON THE GENDER EQUALITY PERCEPTION AS A DRIVER FOR THE FUTURE SPACE WORKFORCE DEVELOPMENT

Abstract

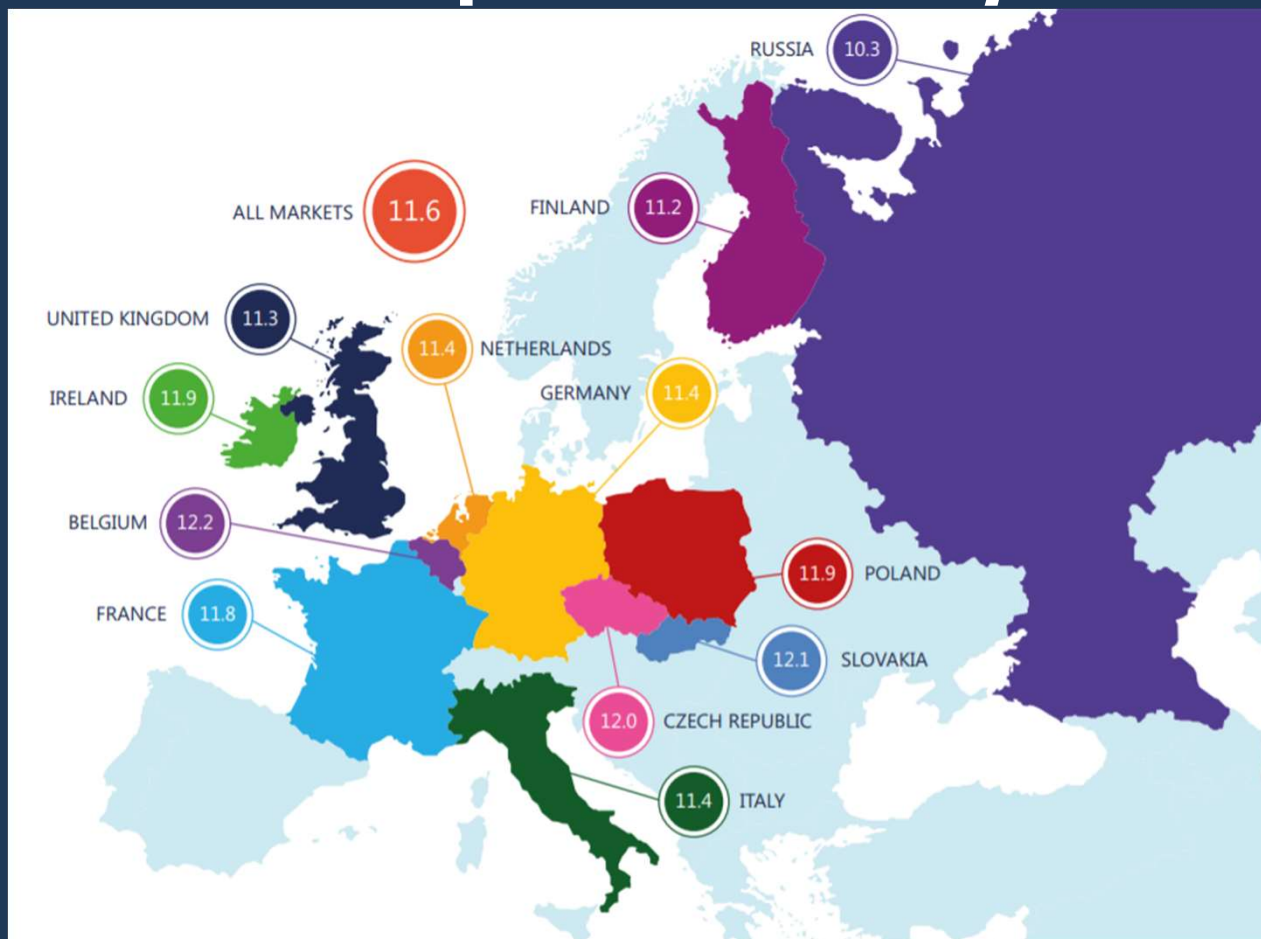
"Workplace gender equality is achieved when people can access and enjoy the same rewards, resources and opportunities regardless of gender". However, creating a culture of equality in the working environment is a challenging goal likely to "not be attained for 99.3 years" (Workplace Gender Equality Agency). After the definition in September 2015 of "2030 Agenda for Sustainable Development Goals" by the United



2021

7

Is there Space for everyone?

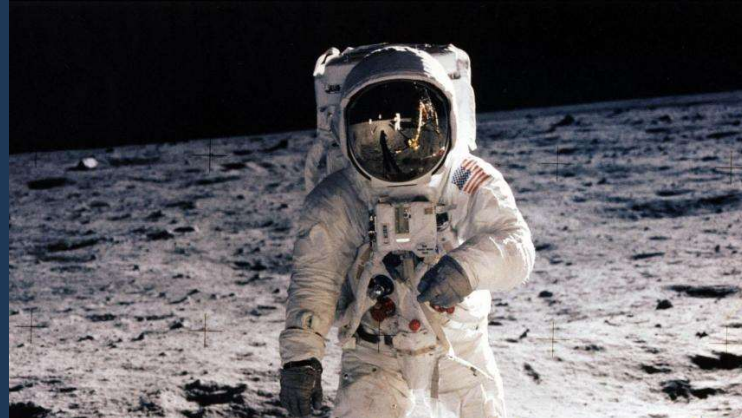


Let's start ?!

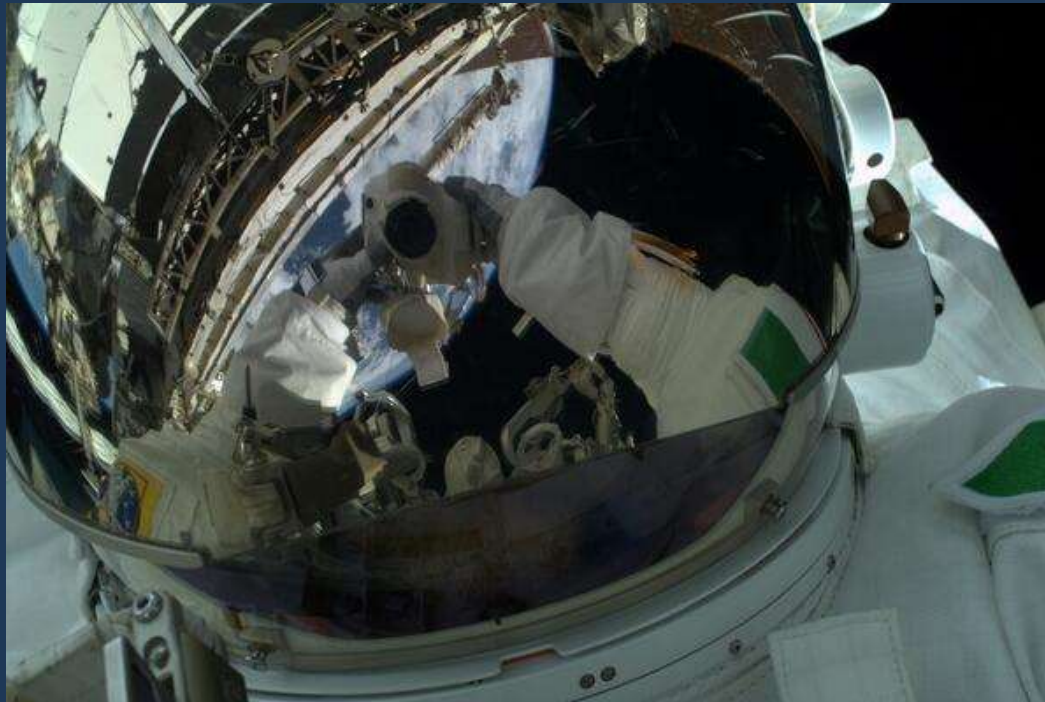
Math, Physics, Science, how many?!



Math, Physics, Science, how many?!



Space for..... a selfie

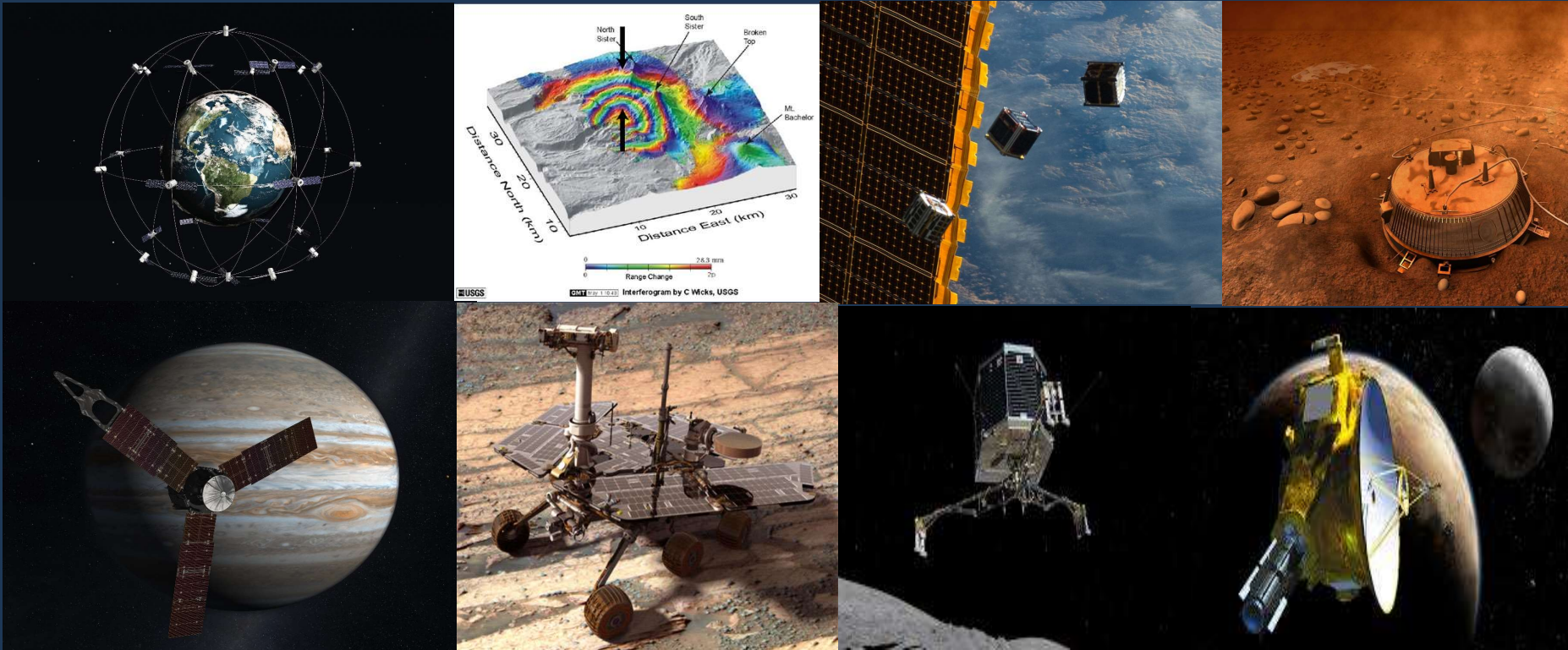


The Space beginning

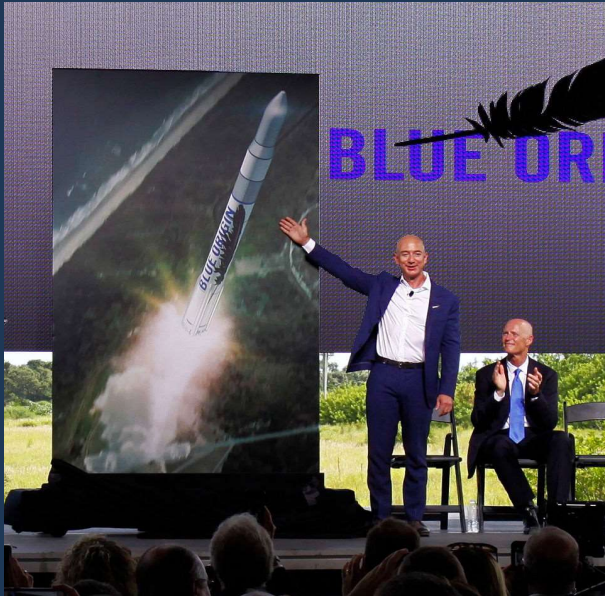
"The Kármán line, or Karman line, lies at an altitude of 100 kilometers (62 mi) above the Earth's sea level, and commonly represents the boundary between the Earth's atmosphere and outer space."



Space Engineering: Satellites, Probes, Space Robotics



Space Tourism



Blue Origin

is developing a variety of technologies, with a focus on rocket-powered vertical takeoff and vertical landing (VTVL) vehicles for access to suborbital and orbital space.

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Virgin Galactic

is developing commercial spacecraft and aims to provide suborbital spaceflights to space tourists

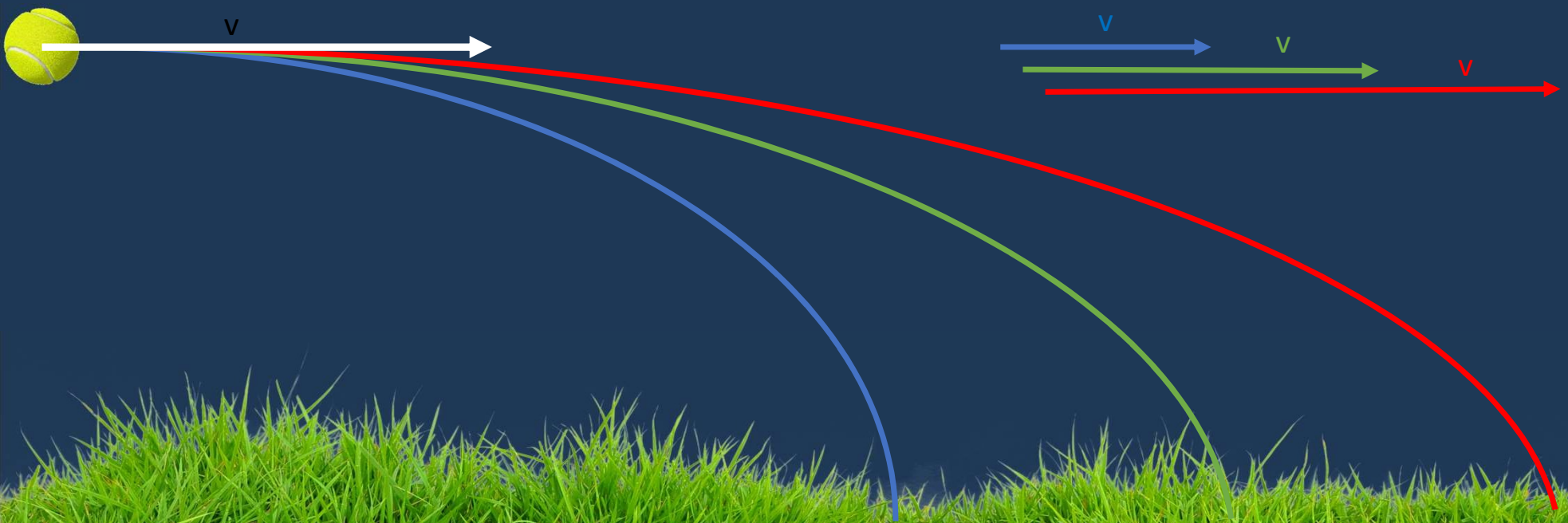
7 December, 2021



World View Enterprises

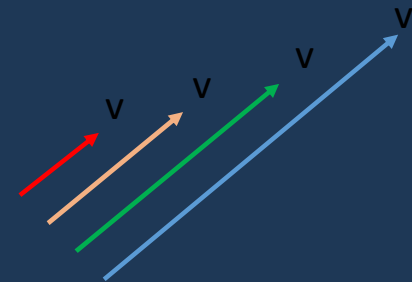
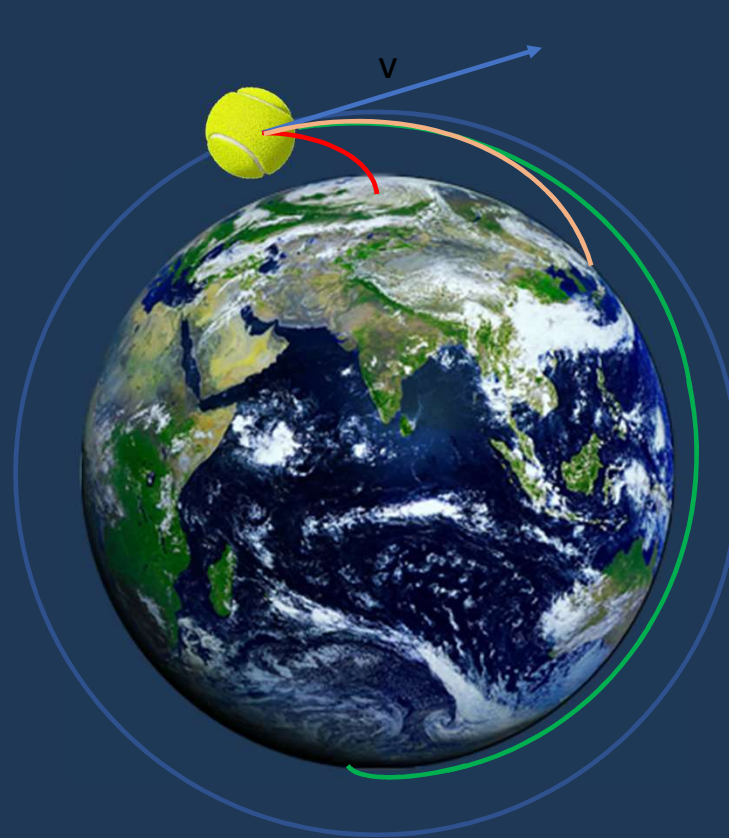
is developing a balloon-based system that will carry people to the stratosphere, with the first commercial flights targeted for early 2024

Orbital Mechanics

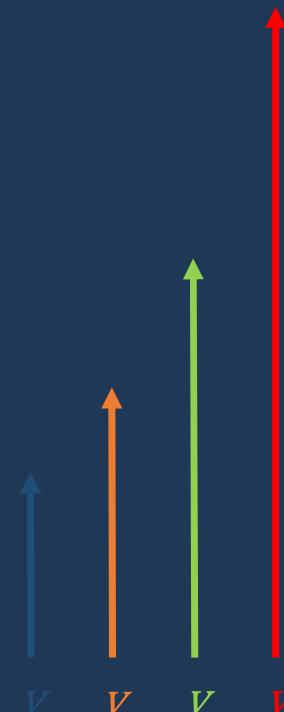
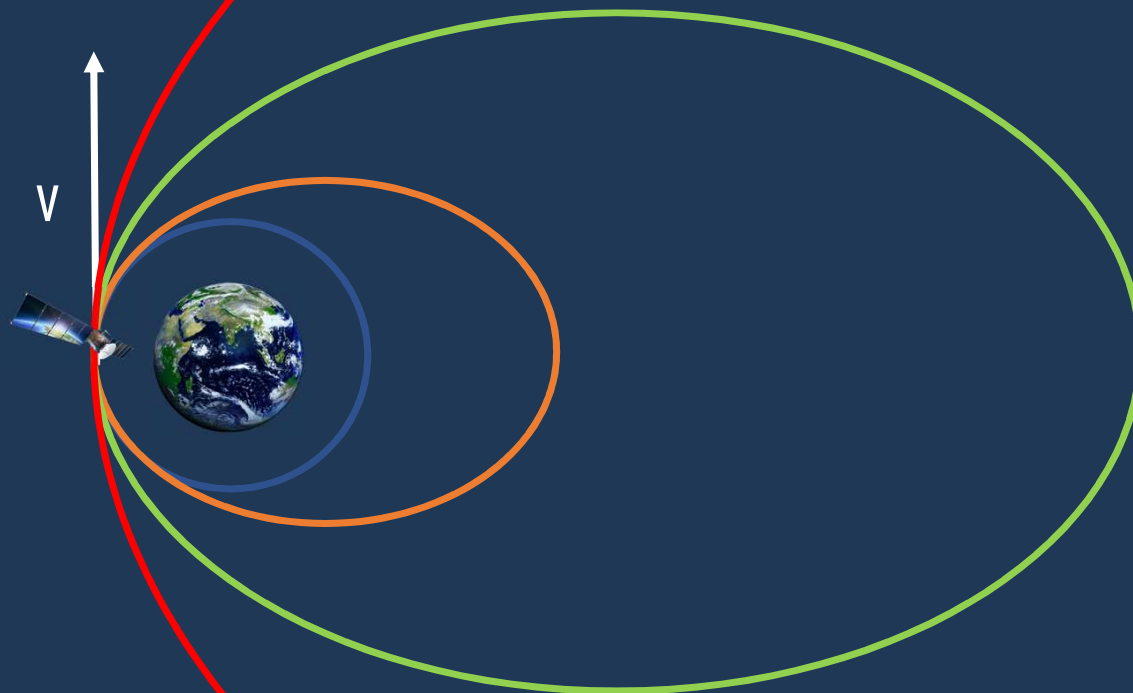


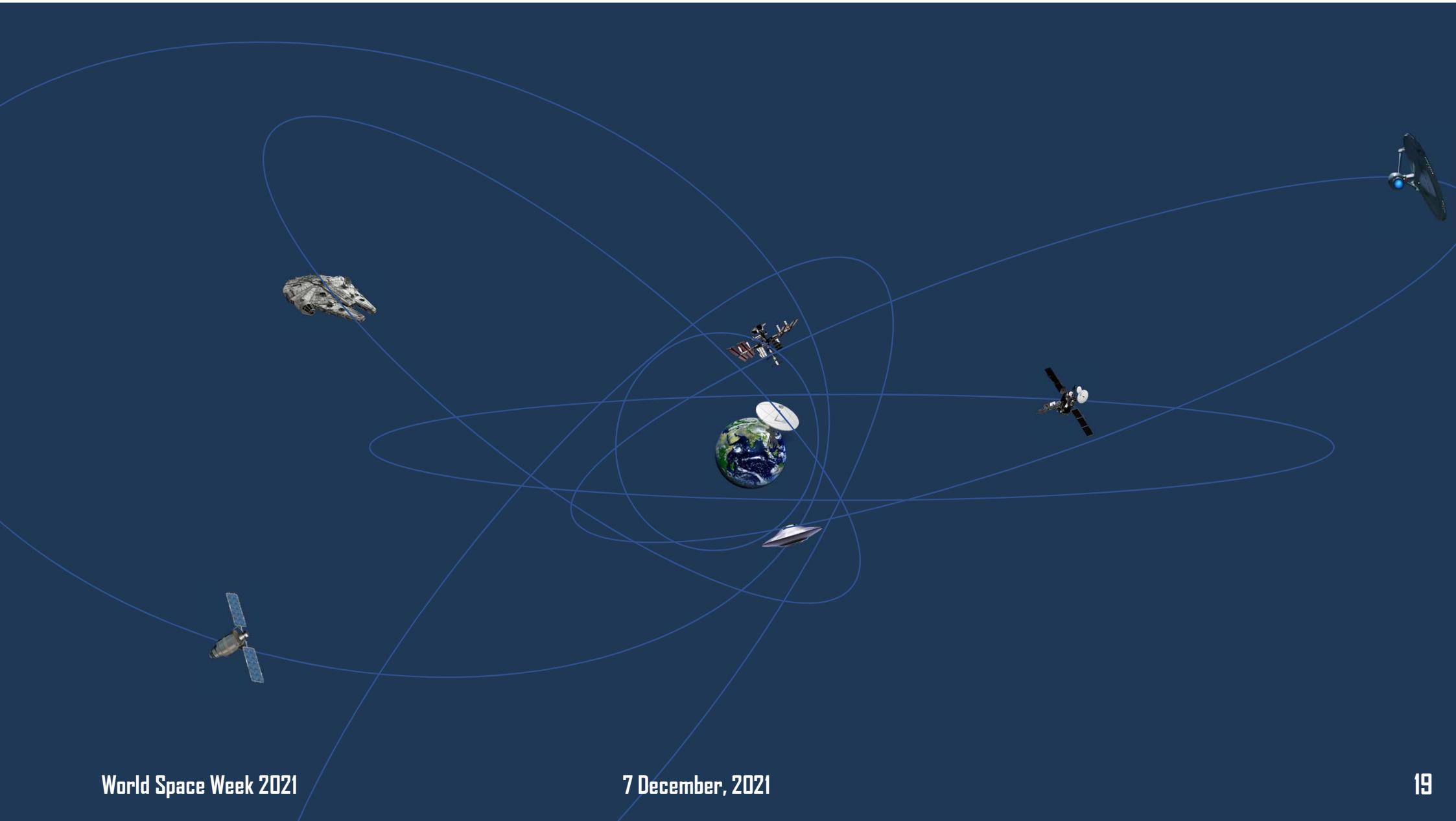
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Orbital Mechanics



Orbital Mechanics



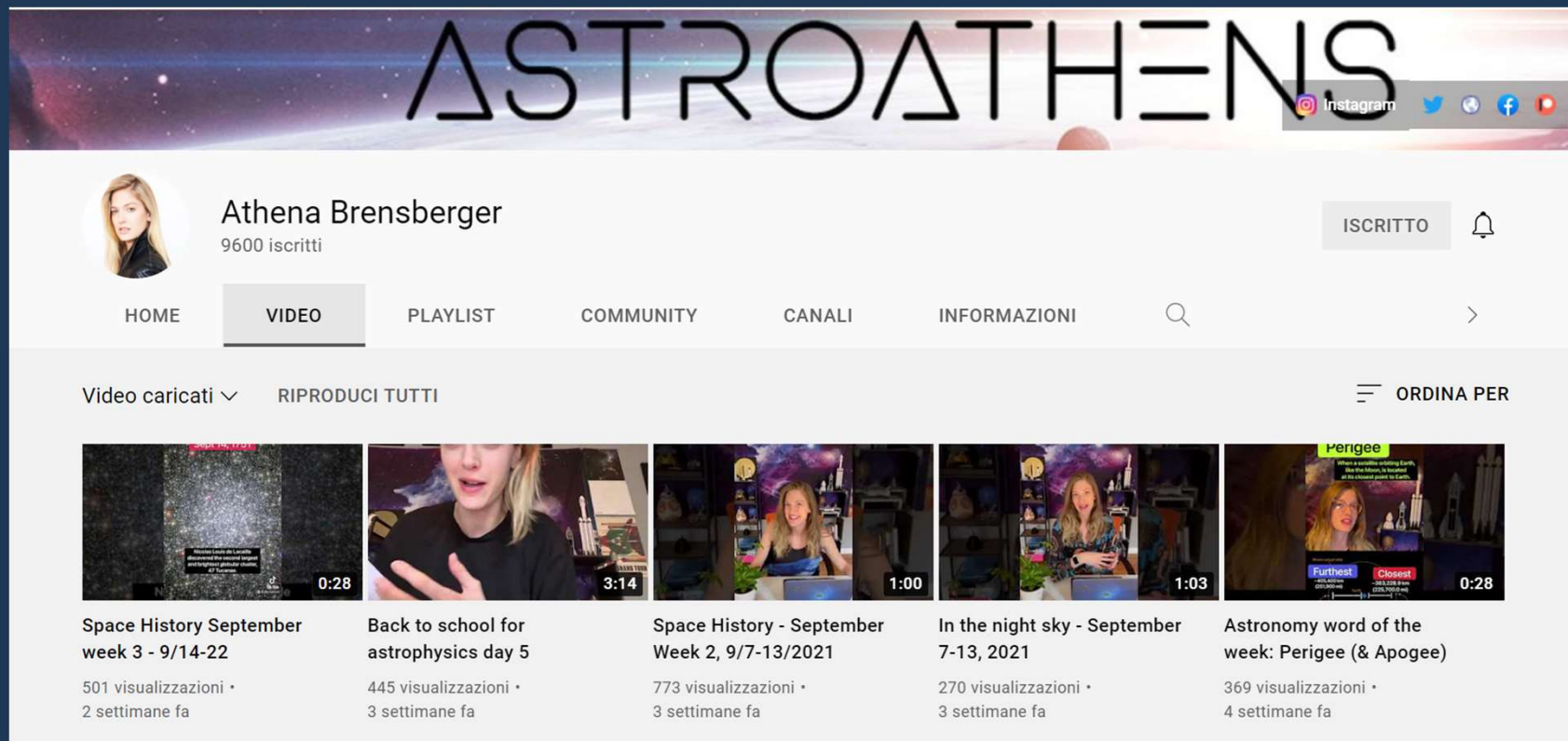


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Space for History

(<https://www.youtube.com/c/Astroathens/videos>)



The screenshot shows the YouTube channel page for 'ASTROATHENS'. The banner features the channel name in large, stylized letters against a cosmic background. Below the banner is the channel's profile picture and name, 'Athena Brensberger', with 9600 subscribers. Navigation tabs include HOME, VIDEO (selected), PLAYLIST, COMMUNITY, CANALI, and INFORMAZIONI. A search icon and a right arrow are also present. Below the tabs, the video upload status is 'Video caricati' and the action is 'RIPRODUCI TUTTI'. A sorting option 'ORDINA PER' is visible. Five video thumbnails are displayed, each with a title, view count, and upload time:

Video Title	Views	Upload Time
Space History September week 3 - 9/14-22	501 visualizzazioni • 2 settimane fa	0:28
Back to school for astrophysics day 5	445 visualizzazioni • 3 settimane fa	3:14
Space History - September Week 2, 9/7-13/2021	773 visualizzazioni • 3 settimane fa	1:00
In the night sky - September 7-13, 2021	270 visualizzazioni • 3 settimane fa	1:03
Astronomy word of the week: Perigee (& Apogee)	369 visualizzazioni • 4 settimane fa	0:28

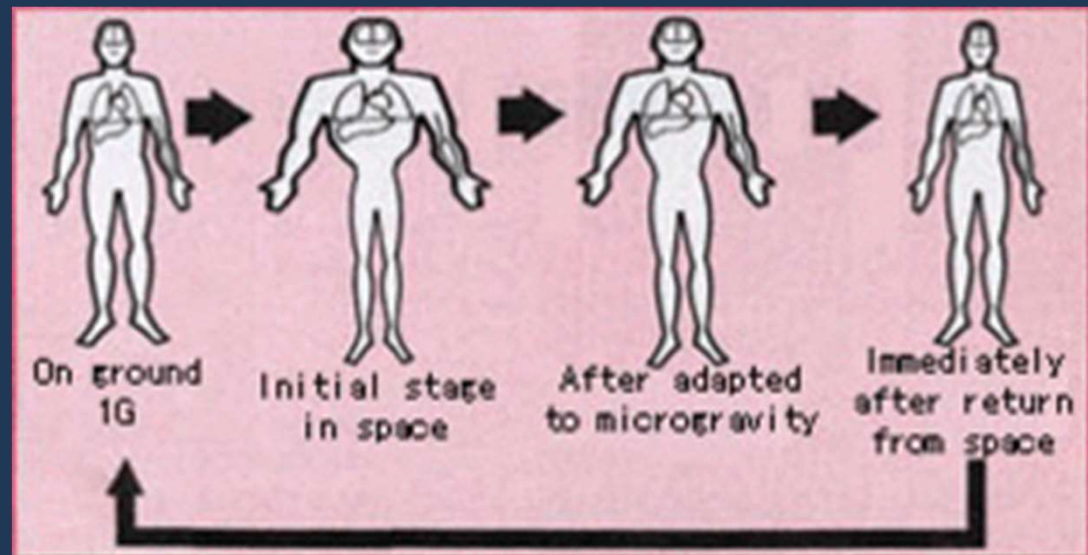
Space for Law (<https://www.unoosa.org/>)



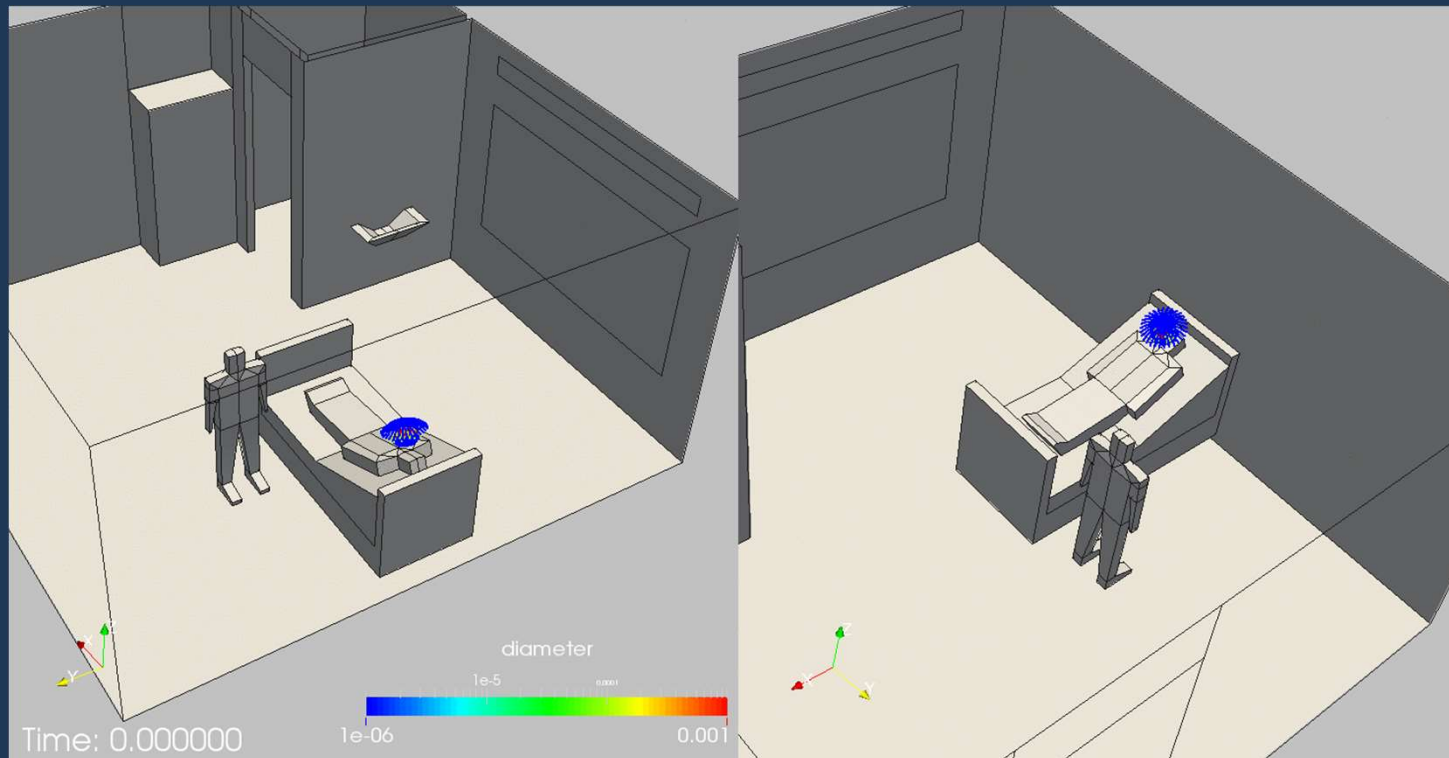
UNITED NATIONS
Office for Outer Space Affairs

Space law can be described as the body of law governing space-related activities. Space law, much like general international law, comprises a variety of international agreements, treaties, conventions, and United Nations General Assembly resolutions as well as rules and regulations of international organizations.

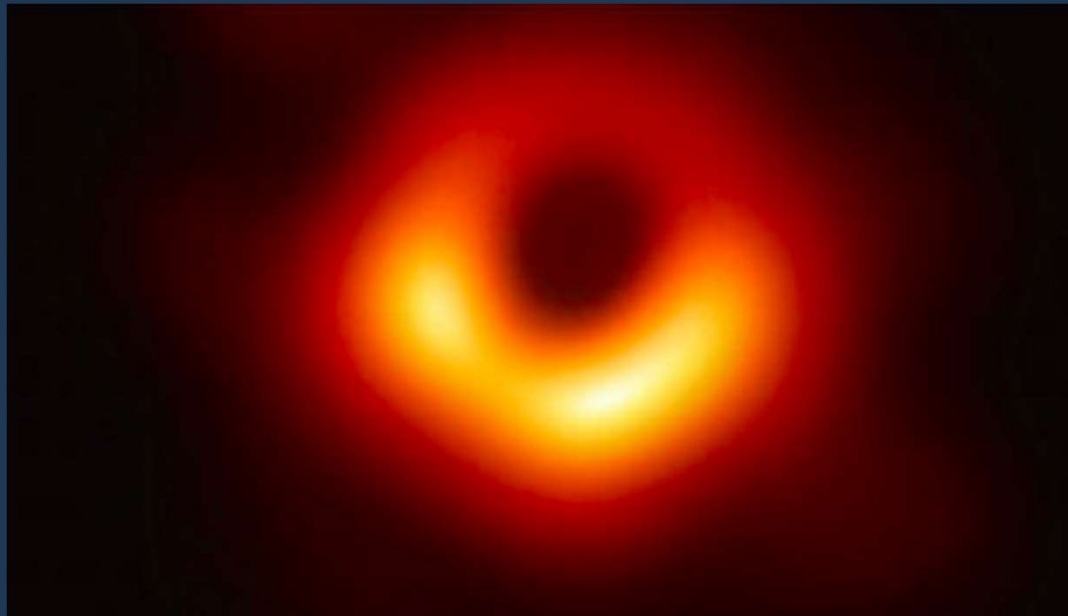
Space for Medicine



Space during COVID-19 time



Space for Black Holes



Space for any gender

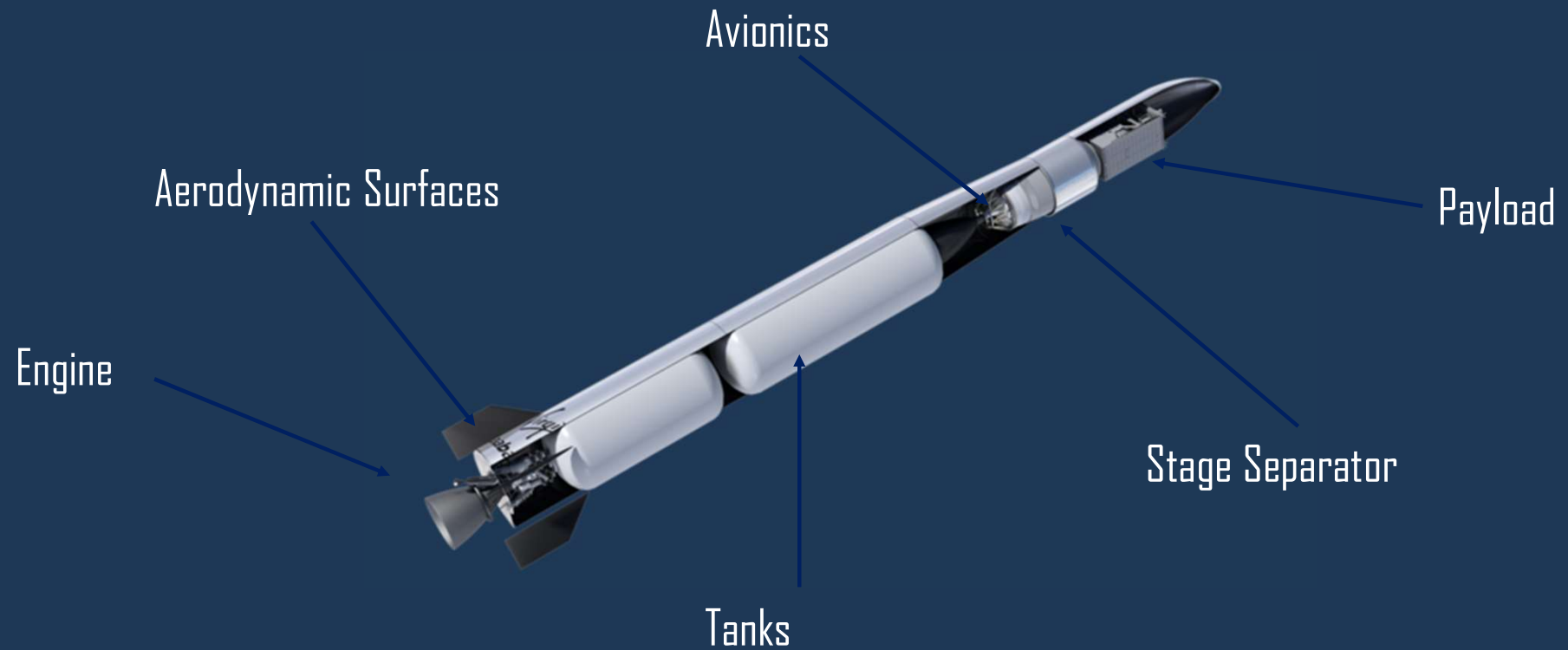
Margaret
Hamilton



Katie
Bouman



Space Launchers



Space at home with water rocket



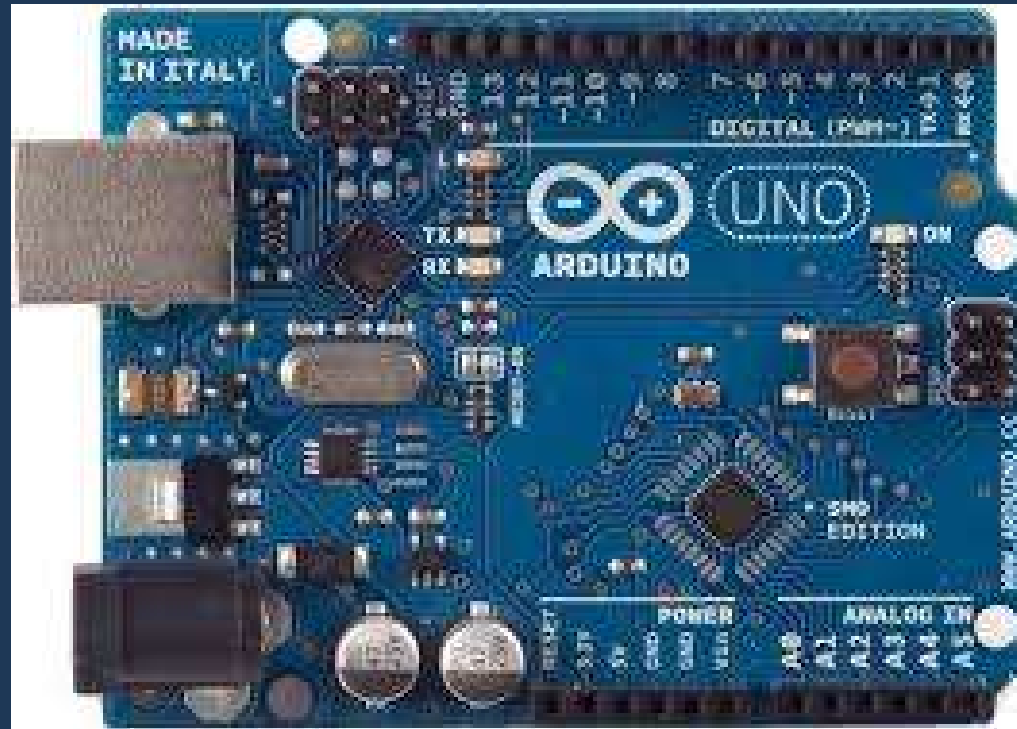


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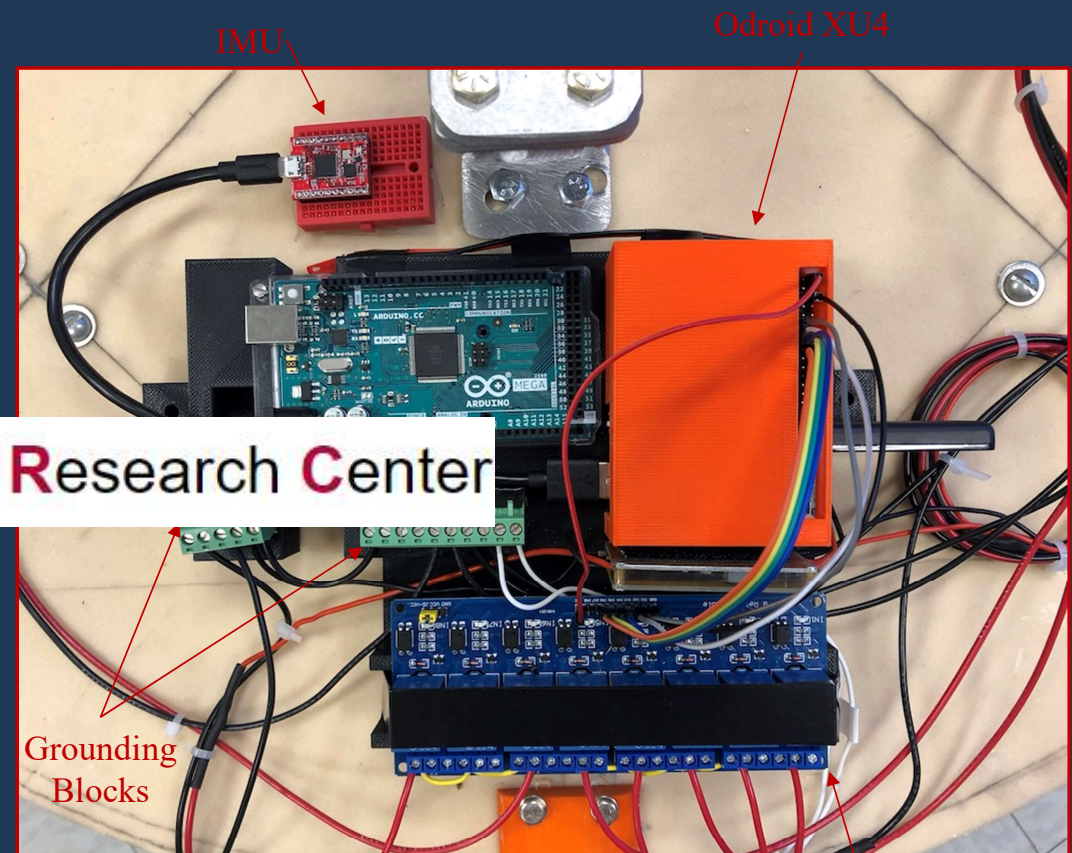
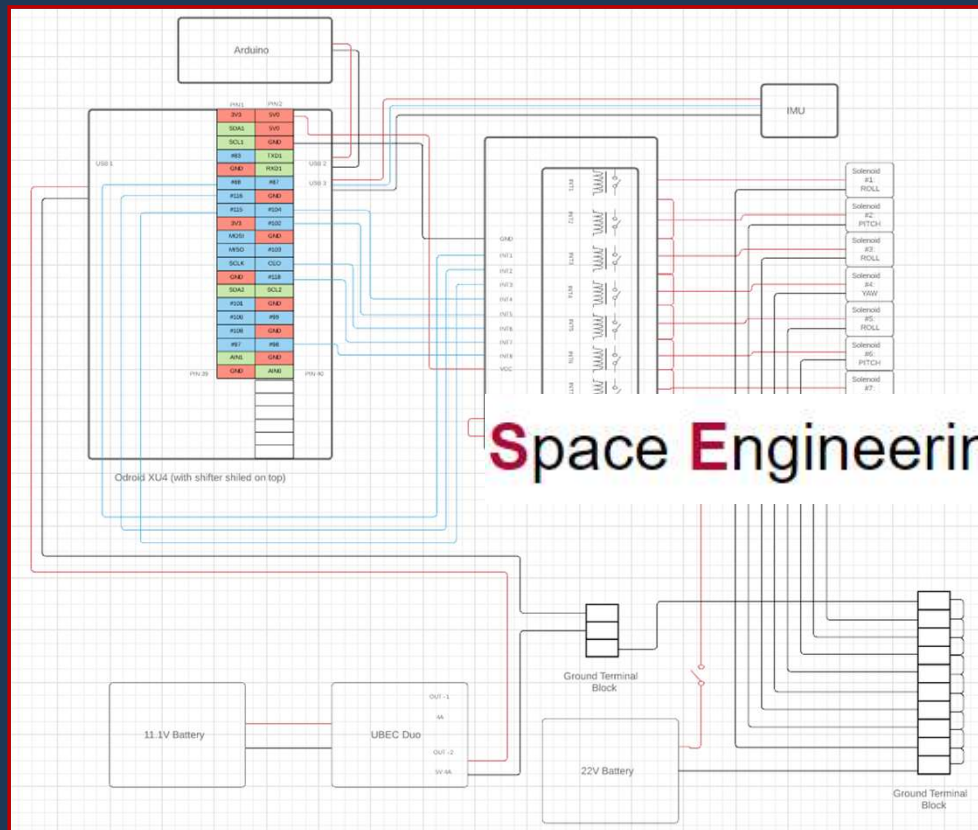
Space at home with water rocket



ARDUINO UNO <https://www.arduino.cc/>



LEAPFROG: Hardware (<https://www.isi.edu/centers/serc/home>)



Space Engineering Research Center



Space Engineering Research Center

7 December, 2021

Space for Questions

