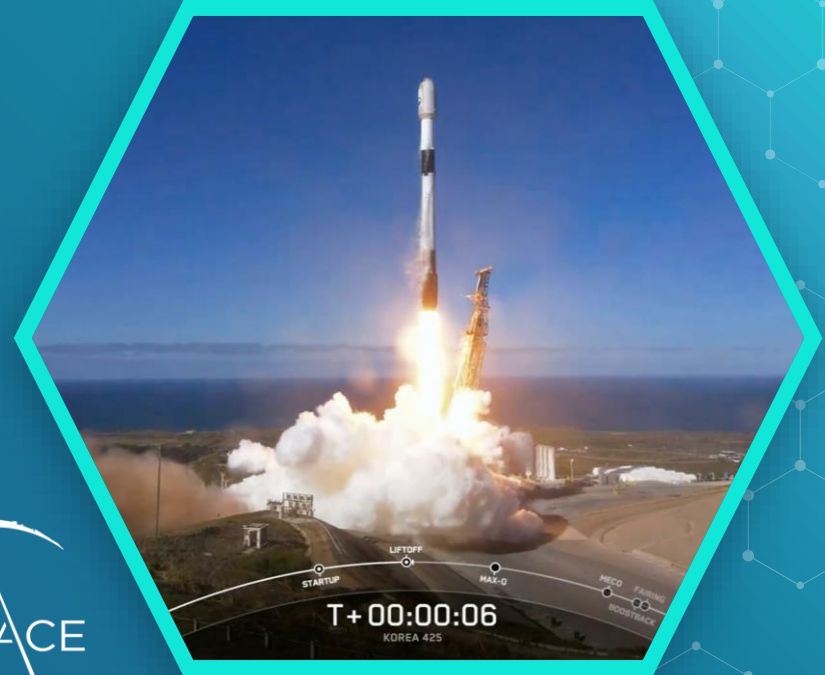


LAUNCHING EIRSAT-1, IRELAND'S FIRST SATELLITE



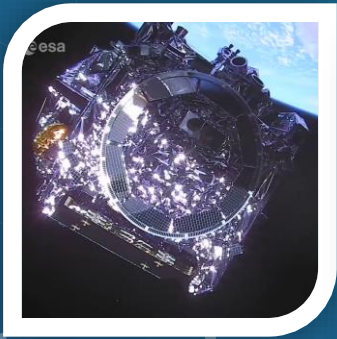
UCD CENTRE FOR SPACE RESEARCH
IONAD UM SPÁSTAIGHDE UCD

Lorraine Hanlon
UCD Centre for Space Research

Deployment



WHY SPACE?



Science
&
Exploration



Innovation
& Technology



Sustainability



Commercial
Growth

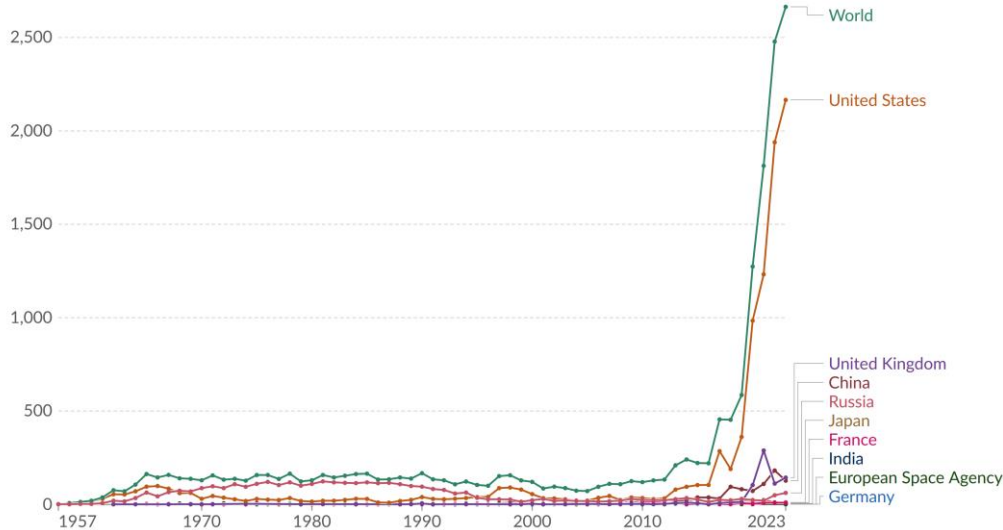


Inspiration

Space is a key sector for future economic growth

Annual number of objects launched into space

This includes satellites, probes, landers, crewed spacecrafts, and space station flight elements launched into Earth orbit or beyond.



Data source: United Nations Office for Outer Space Affairs (2024)

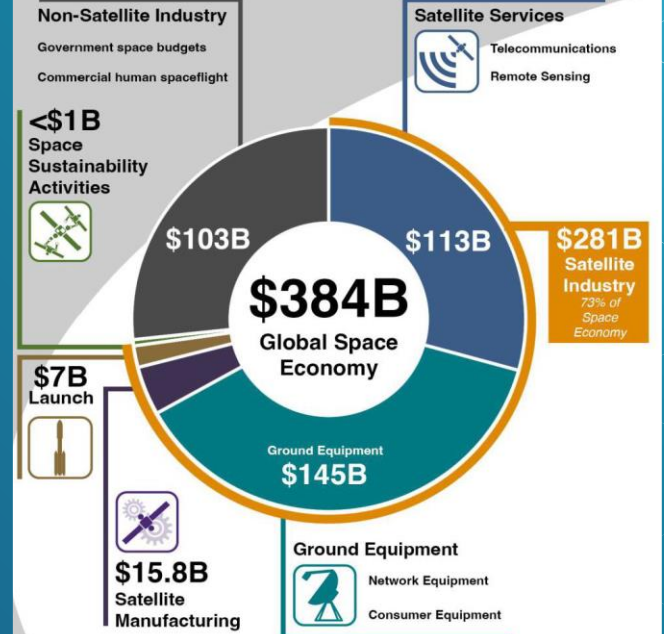
OurWorldInData.org/space-exploration-satellites | CC BY

Note: Where they differ, launch attributions are based on the commissioning country, not the country conducting the operations.

Credit: UN

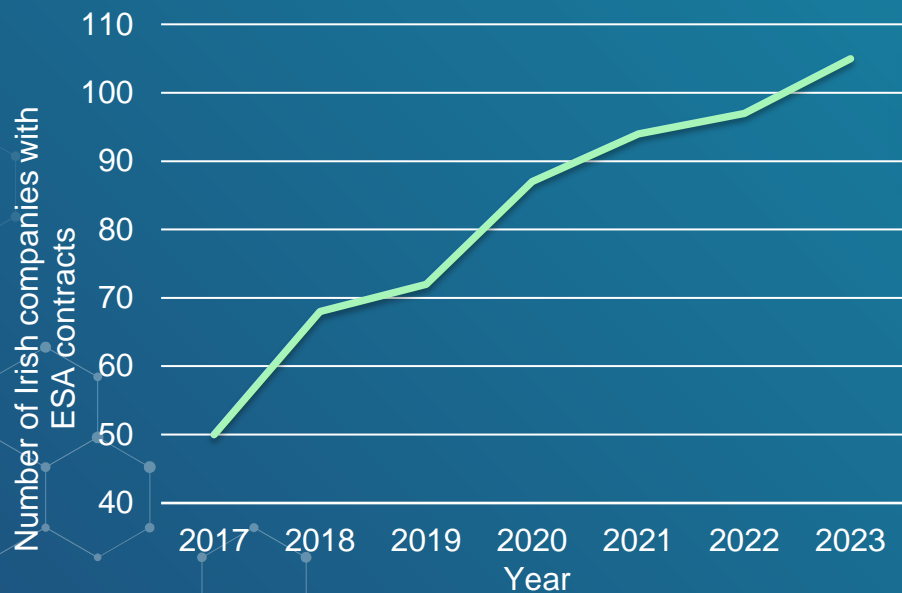
The Satellite Industry in Context

(2022 revenues worldwide in billions of U.S. dollars)



Credit: BryceTech

Growth in the Irish space sector



EIRSAT-1 MISSION GOALS

Design, build, test and operate the first Irish satellite to:

- Demonstrate new technologies for space from Irish companies & researchers
- Develop new skills to grow the capability of the Irish space sector
- Inspire the next generation of space scientists, engineers, designers, dreamers & creators (STEAM)

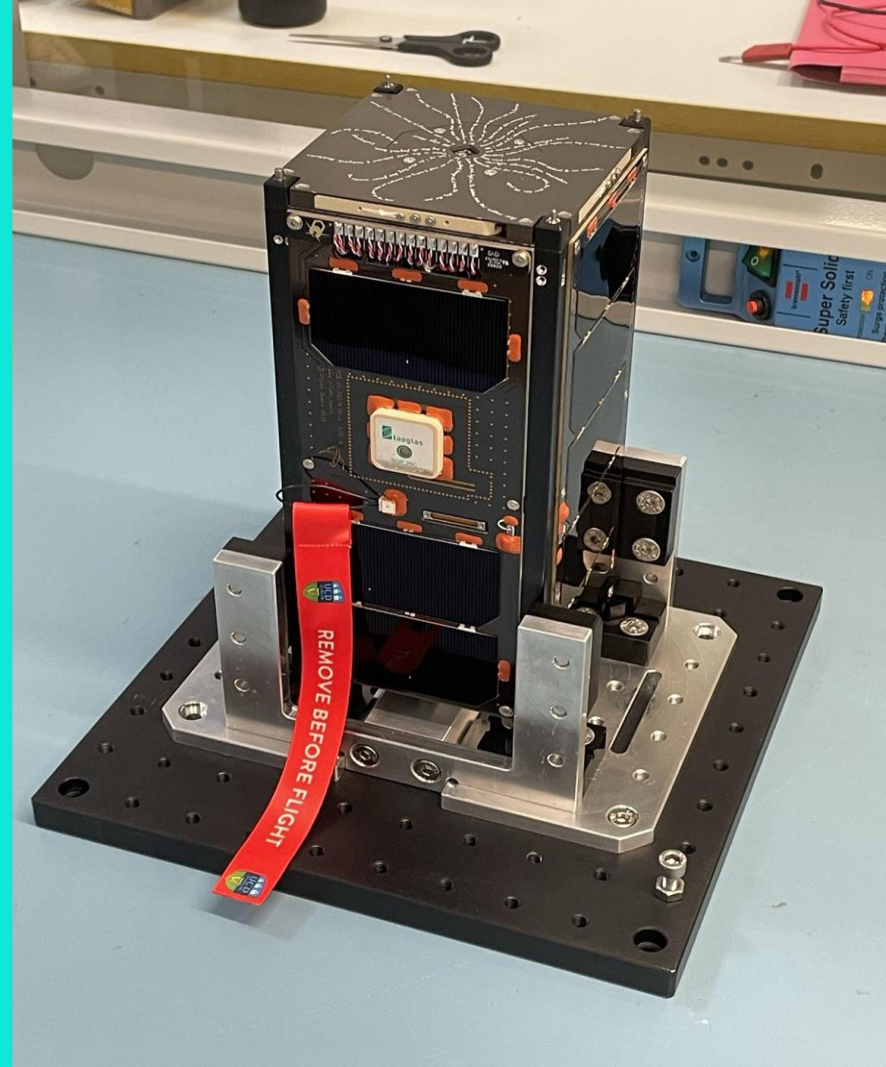


What is EIRSAT-1?

- ◆ A CubeSat weighing 2kg
- ◆ Hosts in-house built experiments for:
 - ◇ High-energy astrophysics
 - ◇ Control systems
 - ◇ Materials science
 - ◇ Deployable antenna
- ◆ Technology from 4 Irish companies on-board
- ◆ Fully implemented by UCD in partnership with the ESA Education 'Fly Your Satellite!' programme



fly your
satellite!



EIRSAT-1 Team



Space

Eirsat-1 launch: all you need to know about Ireland's first satellite

Irish satellite will carry equipment for three experiments as well as helping to fill a space industry skills gap

Expand Roscommon scientist makes history as EIRSAT-1 reaches orbit

DEC 7, 2023 09:11 BY SHANNONSHIDE NEWS



PONY TALES: Maevie reaches for the stars

Maevie Doyle has gone from helping out at her local show to commenting on the launch of the first Irish satellite

Waterford News & Star

HOME WATERFORD NEWS WATERFORD SPORT FAMILY NOTICES NOSTALGIA ENTERTAINMENT NATIONAL

HOME > NATIONAL NEWS > IRELAND'S FIRST-EVER SATELLITE WILL BLAST INTO SPACE LATER THIS MONTH

IRELAND'S FIRST-EVER SATELLITE WILL BLAST INTO SPACE LATER THIS MONTH

TUESDAY, NOVEMBER 07, 2023

Westmeath Independent

Copyright UCD

Meet the team behind Ireland's first satellite which is due to launch into space on Friday



Cork women Laura Cotter and Rachel Dunwoody holding up a model of Ireland's first satellite to be sent to space with their UCD EIRSAT-1 team members in background. Photo: Andres Poveda

Cork women on team launching Ireland's first satellite

Ireland's first satellite is due to launch into orbit next week and two women from county Cork are at the centre of the action.

Laura Cotter from Minane Bridge and Rachel Dunwoody from Charleville are

News Sport Business Lifestyle Drogheda & South Dundalk & North

Louth student part of UCD team behind Ireland's first satellite



Jack Reilly from Clogherhead (front right kneeling) is one of the students in the UCD Satellite project.

Paul Murphy © Drogheda Independent

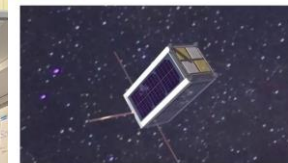


Ireland's first satellite EIRSAT-1 due to launch from California this week

'We are about to become a spacefaring nation,' says UCD researcher

Ireland's first-ever satellite will blast into space later this month

IRELAND



Eirsat-1 will launch into space from a location in California on November 29th

Ireland enters Space Age with student satellite

At a glance

- EIRSAT-1, a student-built CubeSat, has been successfully launched into space, officially becoming Ireland's first satellite
- The student-led project involved more than 50 students from University College Dublin, under guidance of the European Space Agency
- It was deployed into orbit from a

CARLOW NATIVE ON UCD TEAM ABOUT TO LAUNCH IRELAND'S FIRST SATELLITE

FRIDAY, NOVEMBER 24, 2023



A Carlow man is part of a team launching Ireland's first satellite into orbit next week. Designed and built by a student-led team at UCD, EIRSAT-1, will carry three experiments into space and report data back to a command centre on the Irish campus.

Kerry farmer part of team launching Ireland's first satellite

NEWS

Kildare scientist looks forward to launch of Ireland's first satellite



Athlone students make history with space launch

laois Nationalist

IRELAND'S FIRST-EVER SATELLITE WILL BLAST INTO SPACE LATER THIS MONTH

Training a highly educated & relevant workforce

Full space systems capability in Ireland for the first time - direct link to national space policy for enterprise & skills gap



Resources for Schools

- Comic book (9-12 year olds)
- Learning path on scoilnet.ie
- 3D printable model
- Paper model
- Website: www.eirsat1.ie



Comic Book led by Dr. Sharon Shannon UCD
Writer Adam Breen and Artist Helen Robinson

EIRSAT-1

IRELAND'S FIRST STEPS
INTO SPACE



The launch campaign



fly your satellite!

ESA Documentary 'How students built Ireland's first satellite' (10,000+ views on YouTube)



'Ad Astra: Launch of EIRSAT-1' ESA Web TV live launch broadcast from UCD (60,000 views)

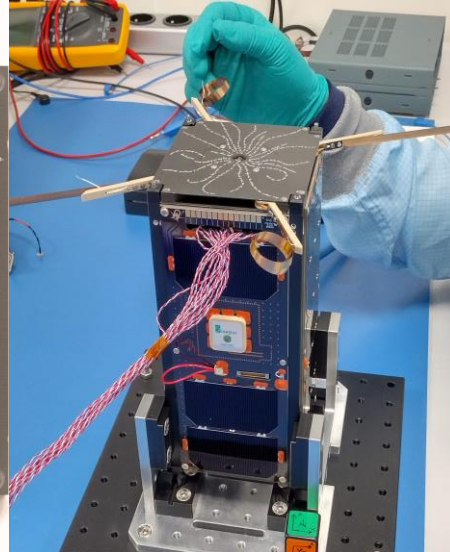
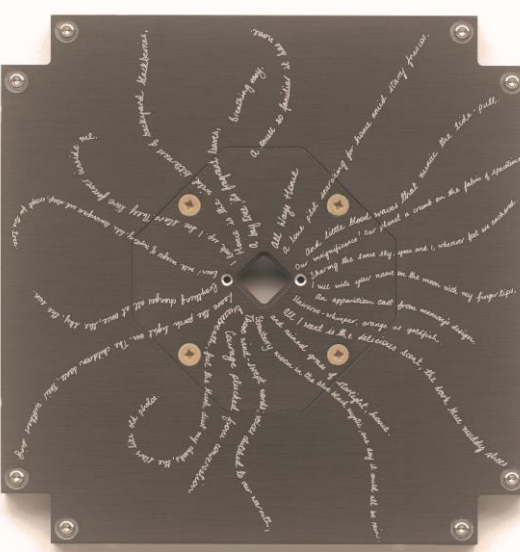


>8,000,000 viewers/readers across traditional media platforms
>2,900,000 on social media platforms

Impact of EIRSAT-1 on national policy and law

- ◆ Dáil debate & ratification of UN Outer Space Treaty
- ◆ Cabinet authorisation process for EIRSAT-1
- ◆ Legal agreement between UCD and Government





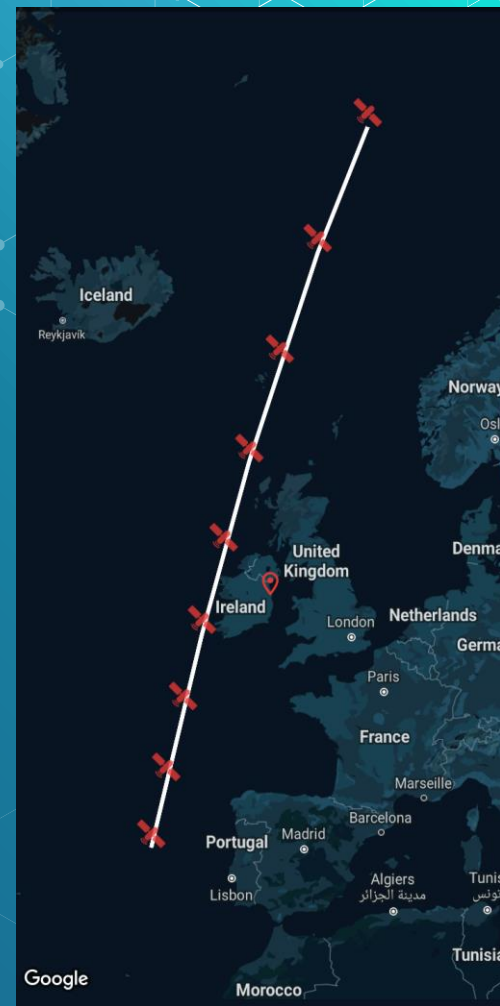
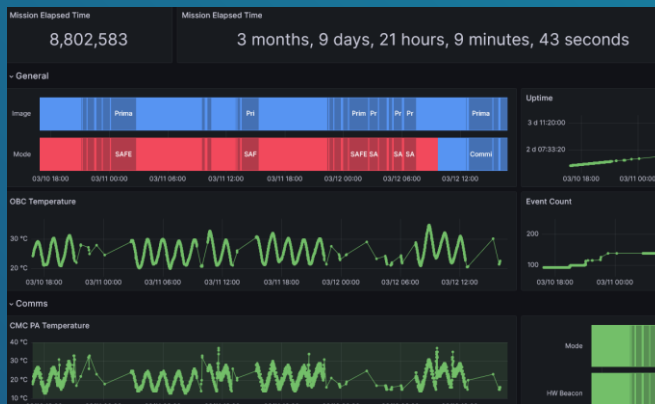
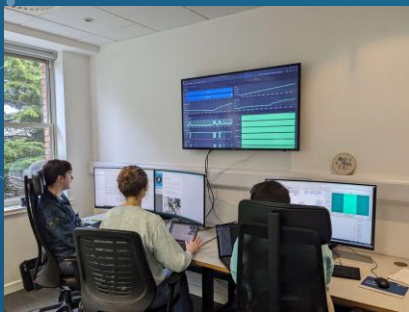
Space Poem 'All Ways Home'

- ◆ Key message - Space is for everyone
- ◆ Addressing systemic barriers to participation in STEM, especially for girls
- ◆ Broadening space engagement
 - ◇ Humanities + STEM
- ◆ Co-created by secondary school pupils, UCD creative writers, Parity Studios, JCSP Libraries & MoLI online during lock-down
- ◆ Poem etched on the spacecraft
- ◆ Animated version online



EIRSAT-1 Operations

- 2-way communication between UCD's ground station & EIRSAT-1 was established on 04th December 2023
- Amateur radio frequency bands (VHF/UHF) used
- Commissioning well underway – all systems healthy, data flowing
- Sun Synchronous Orbit with current altitude of 507km
- Estimated lifetime 2-3 years
- Will burn up on re-entry





THANK YOU!