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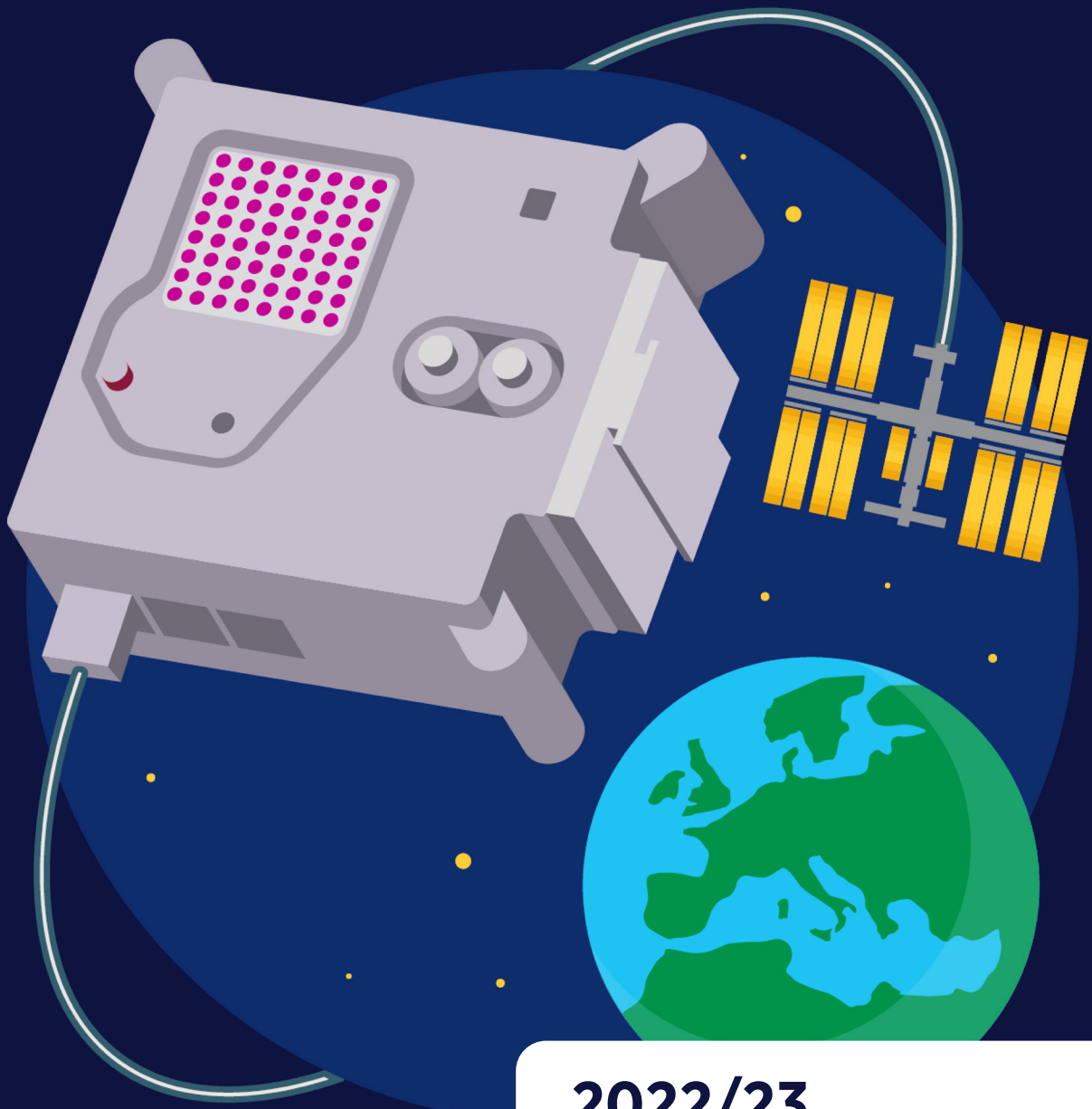

2022/23

The European Astro Pi Challenge

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GOVERNMENT OF MALTA

MINISTRY FOR EDUCATION, SPORT, YOUTH, RESEARCH AND INNOVATION

PARLIAMENTARY SECRETARIAT FOR YOUTH, RESEARCH AND INNOVATION

2022/23
The European Astro Pi Challenge

Giving young people the chance to run their computer programmes in space.

Esplora, in collaboration with ESA Education and the Raspberry Pi Foundation, are delighted to announce that the **European Astro Pi Challenge** is back! There are two Astro Pi challenges available, Mission Space Lab and Mission Zero, open for children and young people up to the age of 19.

More detailed information on the two challenges can be found below.

Mission Space Lab

Mission Space Lab offers teams of young people the chance to have their scientific experiments run on board the International Space Station!

- **Registrations open**: 12th September 2022
- **Deadline for project entry submission**: 28th October 2022

Challenge Overview

Mission Space Lab offers young people the chance to have their scientific experiments run on the International Space Station (ISS). The challenge is to design and programme a scientific experiment to be run on an Astro Pi computer.

The challenge is completed by teams of 2–6 eligible young people (see the **Mission Space Lab eligibility criteria**), supervised by an adult mentor such as a teacher or parent.

There are two Mission Space Lab themes you can choose from, depending on what you would like your experiment to investigate:

- **Life on Earth**
- **Life in Space**

The challenge runs from September 2022 to June 2023 in four phases: Design, Create, Deploy and Analyse. The best experiments will be deployed in space and teams will have the opportunity to analyse and report on the results. The best reports will be selected to win an exclusive prize!

For more detailed information about the project requirements and constraints, please read through the **Astro Pi Guidelines**.

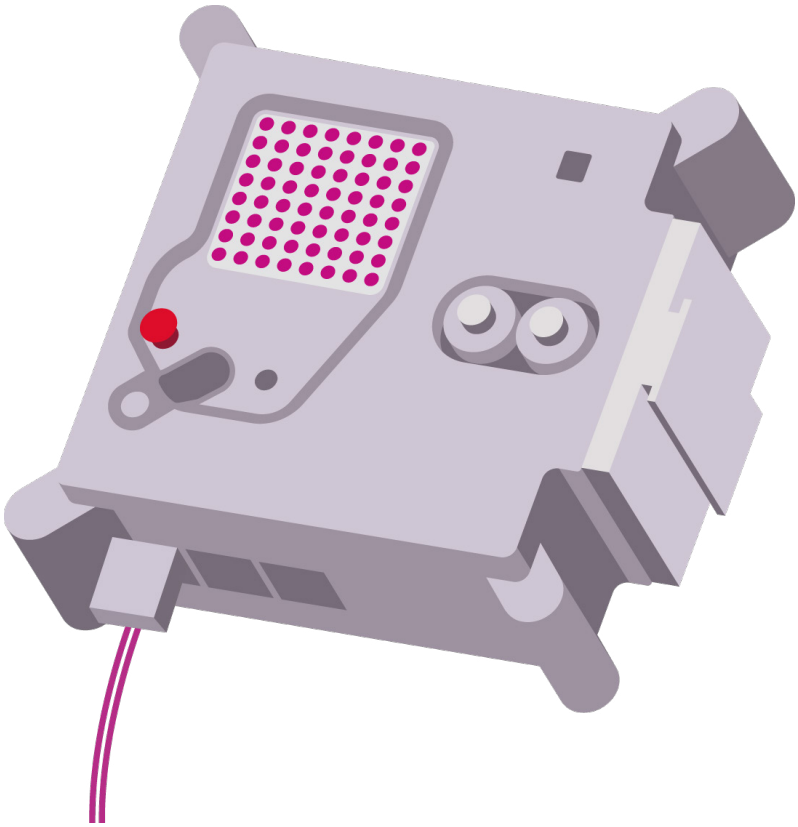
Read about the winning and highly commended entries from the 2021/22 challenge in the online article **Astro Pi Mission Space Lab 2021/22: The results** for amazing examples of what teams have investigated in previous challenges.

How to Apply

To get started, the team mentor needs to sign up for a **Raspberry Pi account** and register their team. Their team's experiment idea must be submitted by 28th October 2022 to enter Mission Space Lab.

After a judging process by ESA's Education Team, the teams who submitted the best and most practical ideas will be sent their own Astro Pi kit to develop their experiment and write their computer programme to be run on the ISS!

Visit the **Astro Pi website** for the Mission Space Lab **timeline** and more details on how to enter.



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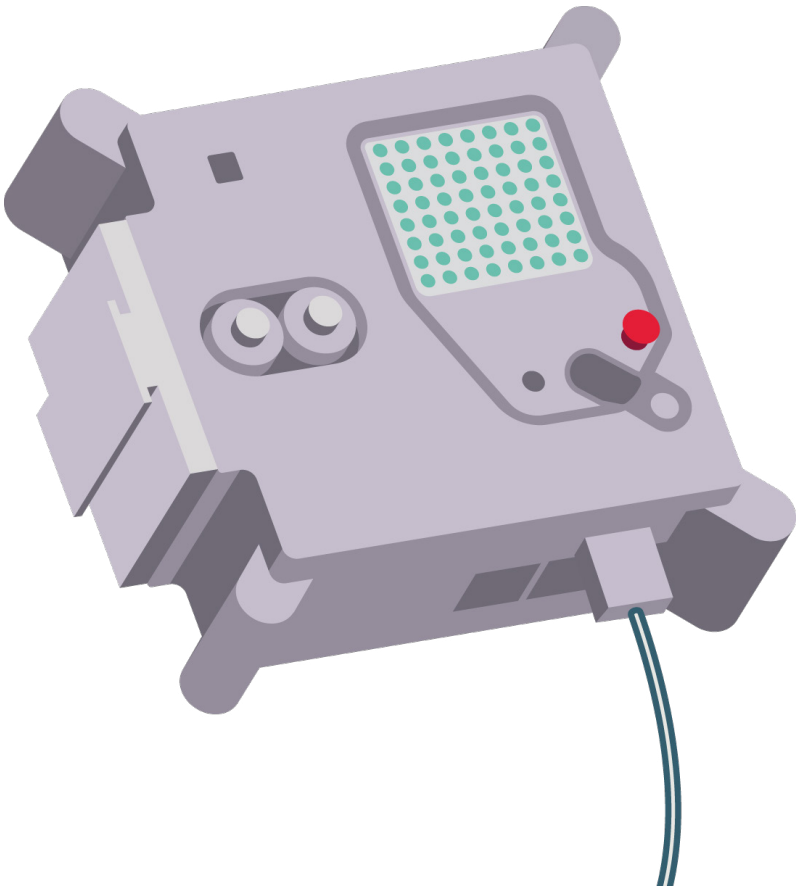
The Astro Pi Kit

Experiments submitted are evaluated by ESA for their feasibility, scientific value, and creativity. Mentors will receive an email confirming acceptance to **Phase 2** of the challenge in mid-November 2022.

Esplora will then send you an Astro Pi kit for your school or club to the address you provided in your Phase 1 submission. Each mentor will receive one kit only. This kit will contain the same hardware that is included in the Astro Pi computers on the ISS.

The Astro Pi website contains a comprehensive **Mission Space Lab Phase 2 project guide** for help with assembling your kit and writing and testing your experiment program. This guide also includes essential information on what is and isn't possible with the Astro Pi hardware and software.

Educators interested in acquiring more information, prior to submitting their experiment to ESA, can reach out to Esplora Interactive Science Centre at **programmes@esplora.org.mt**.



Mission Zero

Mission Zero offers young people the chance to have their code run in space! Write a simple programme to take a reading from the colour and luminosity sensor on an Astro Pi computer on board the ISS and use it to set the background colour in a personalised image for the astronauts to see as they go about their daily tasks.

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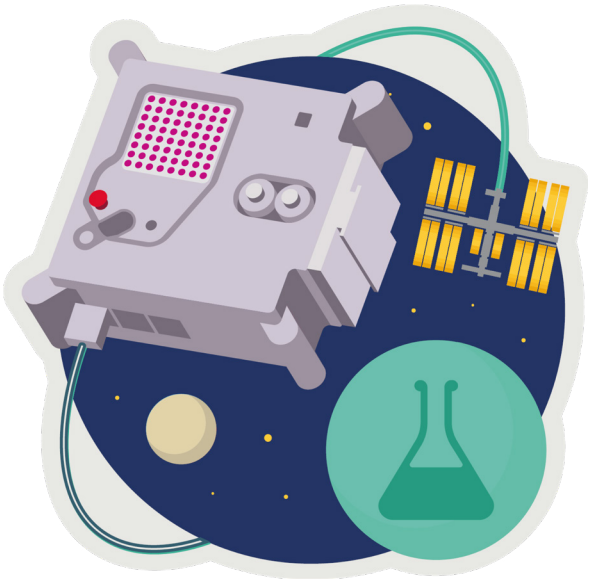
Registrations open: 22nd September 2022
Challenge runs until: 17th March 2023

This challenge is suitable for beginners to programming and/or primary school–aged children and can be completed in a single 60-minute session, on any computer with internet access. Everything can be done in a web browser! No special equipment or coding skills are needed.

Teams or individuals write a simple programme, following a **step-by-step guide**, to take a reading using a sensor on one of the Astro Pi computers and display a picture for the astronauts on board the ISS. The theme for Mission Zero 2022/23 is 'Flora and Fauna'. Images could represent any aspect of this theme as long as they follow the official guidelines, for example, flowers, trees, animals, or insects.

Participants must be supervised by a mentor and can enter individually or as part of a team of up to 4 young people. Check the **eligibility criteria** for more information. All eligible entries should follow the **official guidelines** including logging into the Astro Pi Mission Zero website and **registering** so that a classroom code is sent and students will have the opportunity to run their programme in space for up to 30 seconds. Participants will receive a certificate that they can download recording the exact start and end time, and the position of the ISS when their program ran — a piece of space science history to keep!

You can learn more, access project resources, and sign up for the European Astro Pi Challenge 2022/23 on the **Astro Pi website**.



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