MOSKITO

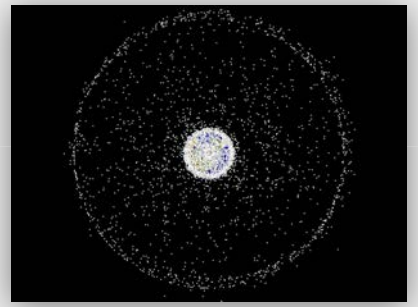
Even the smallest fly can make the biggest difference.

What Is MOSKIT0?

MOSKIT0 is a design for a space-junk collecting robot. Currently, there are over 9,000 metric tonnes of material orbiting the earth (according to Nasa in 2022). The fact that there is this much debris in our atmosphere could affect future space expeditions.

This idea was proposed by NASA scientist Donald Kessler in 1978. He said that if there was too much space junk in orbit, it could result in a chain reaction where more and more objects collide, and as a result create new space junk in the process, to the point where Earth's orbit can became unusable. This is why we have decided to create a reusable prototype to collect space debris, and return our orbit back to normal, and free of waste.

MOSKIT0 stands for:
Mechanical
Orbiting
Space
'K'ollecting
Intelligent
Technology
0 waste ignored



The Design of MOSKIT0

Our design of **MOSKIT0** is based off a mosquito.
We have mimicked the wings with **retractable solar panels**. There is a **net** that will open up and catch any space debris in its path. It is made of stainless steel and is a wire mesh. This means it is durable and fairly lightweight. When it returns back to Earth, a parachute will open up, allowing it to be used over and over again.

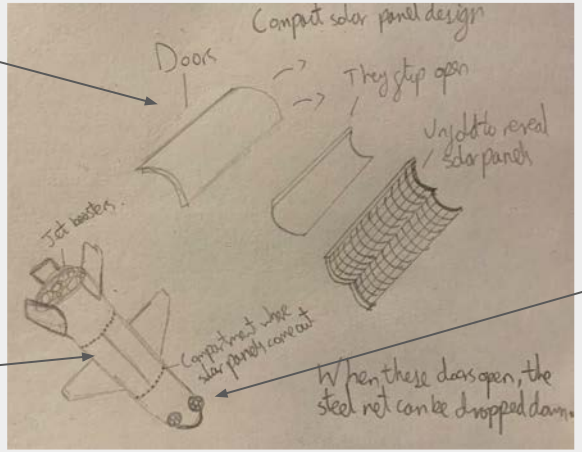
Our overall design, including the retractable net and solar panel wings, are inspired by the **James Webb Telescope.** We plan to have the MOSKIT0 made of mostly beryllium metal, which is a light and incredibly strong material. This will allow us to launch our machine into the atmosphere via catapult. As a result, we can further cut our emissions.

Nasa's catapult planning to fling objects into space

Our Current Design of MOSKIT0

Our prototype is about 5 metres in length. It aims to collect large pieces of space junk and burn them up in the atmosphere. It does this by trapping rubbish in a metal net, and hurtles back towards Earth at speeds of 17,500 mph.

The compartments open at the bottom of the MOSKIT0, to reveal solar panels that fold outwards. A steel metal net can then be dropped down



There are boosters at the bottom of the space craft.

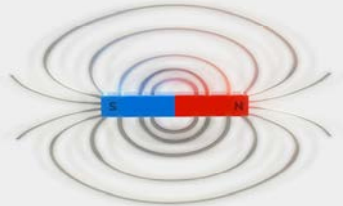
The eyes at the front help us navegate the space probe throughout orbit.

OBJECTIVES

MOSKITo (‘mosquito’) has multiple objectives it aims to fulfill.
One of our main objectives is to **declutter space** by removing ‘space junk’ out of orbit. Through this, we hope to endorse more **eco-friendly** behaviours in many major space organisations. This may encourage them to reduce their carbon footprint, and the amount of waste they dispose of.

By doing this and ensuring we lead eco-friendly lifestyles, the effects of climate change can begin to decrease.

How We Will Achieve Our Goals



In order to collect space debris, we have decided to use a net made of stainless steel. This will fold out from underneath and collect any oncoming rubbish.

As stated before, MOSKIT0 will be catapulted into space, reducing our carbon emissions, and allowing multiple to be fired in quick succession.

We have debated collecting scrap with a magnet, but we have deemed this inefficient. If we only used a magnet, we would only be able to collect certain types of metal. Furthermore, if we wanted to capture large pieces of space junk, we would need an incredibly heavy and expensive magnet. Therefore, this proves to be inefficient.

Reducing our impact

It is undeniable manufacturing the **MOSKIT0** will cause significant detriment to our environment. This is primarily due to the emissions produced as a result of sourcing and burning fuel. The RPA team aim to offset this environmental cost by our **planting pledge**.

We resolve to plant 50 trees per launch as a goal towards the **Eden reforestation project** in Brazil.

These saplings will eventually produce a myriad of biological carbon capture machines: also known as trees.

In Conclusion…

MOSKITo has been designed to collect space debris in order to decrease the threat of an accumulation of this junk poses in the most efficient way possible!

The design itself has been created in consideration of the environment it will be put in to and the task it has been set for it.

Not only this but MOSKITo aims to aid environmental projects to help decrease our carbon footprint and to inspire others to consider doing the same thing.

Lastly, the appearance and name of the MOSKITo both call back to insects, reminding us of our duty to protect our wildlife.
- RPA team.