



Sky Canvas: Artificial Meteor Showers

Why in News?

Recently, a Japanese company, ALE, plans to **launch [satellites](#) that will trigger an artificial [meteor shower](#)**, called **Sky Canvas in 2025**.

What is the Sky Canvas Project?

- The **Sky Canvas** project aims to give people all over the world **“the opportunity to view the world’s first live human-made meteor shower.”**
- ALE plans to use a **pressure-driven system of gas tanks** that will **shoot pellets at a speed of 8 kilometers per second** to trigger the artificial meteor shower.
 - The metal “shooting star” particles will be **taken to a [low-Earth orbit](#) by small satellites**.
- Once the orbit stabilises, the particles will be released, and they will travel around part of the planet before entering the atmosphere at an altitude of **60 to 80 kilometres**.
 - The company also hopes to collect **atmospheric data in the mesosphere (the third layer of the atmosphere) to further scientific understanding of [climate change](#)**.
 - The Mesosphere is **too low to be observed by satellites** and **too high for weather balloons or aircraft**.

How Does a Natural Meteor Shower Occurs?

- A natural meteor shower **occurs when the Earth passes through a stream of debris left behind by a [comet](#) or [asteroid](#)**.
 - As the Earth travels in its orbit around the Sun, it encounters these streams of debris, which are **composed of tiny particles of dust and rock**.
- As the Earth passes through this debris, the **particles enter the Earth's atmosphere** at high speeds, typically around **40 kilometres per second**.
 - The **friction between the particles and the atmosphere causes them to heat up and vaporise**, creating the streaks of light that we see as **meteors** or “shooting stars.”
- The name of the meteor shower is typically **derived from the constellation from which the meteors appear to radiate**.
 - For example, the **[Perseid meteor shower](#)** appears to originate from the constellation **Perseus**.
 - Around **30 meteor showers that are visible to observers on Earth occur every year** and some of them have been observed for centuries.

[Source: IE](#)