



Rapid Fire Current Affairs

NASA's Multi-Angle Imager for Aerosols (MAIA) missions

[National Aeronautics and Space Administration \(NASA\)](#) and **Italian Space Agency** (Agenzia Spaziale Italiana :ASI) will build and **launch the Multi-Angle Imager for Aerosols (MAIA) missions before 2024**. The **three-year mission** will focus on **11 primary target areas** including New Delhi from India.

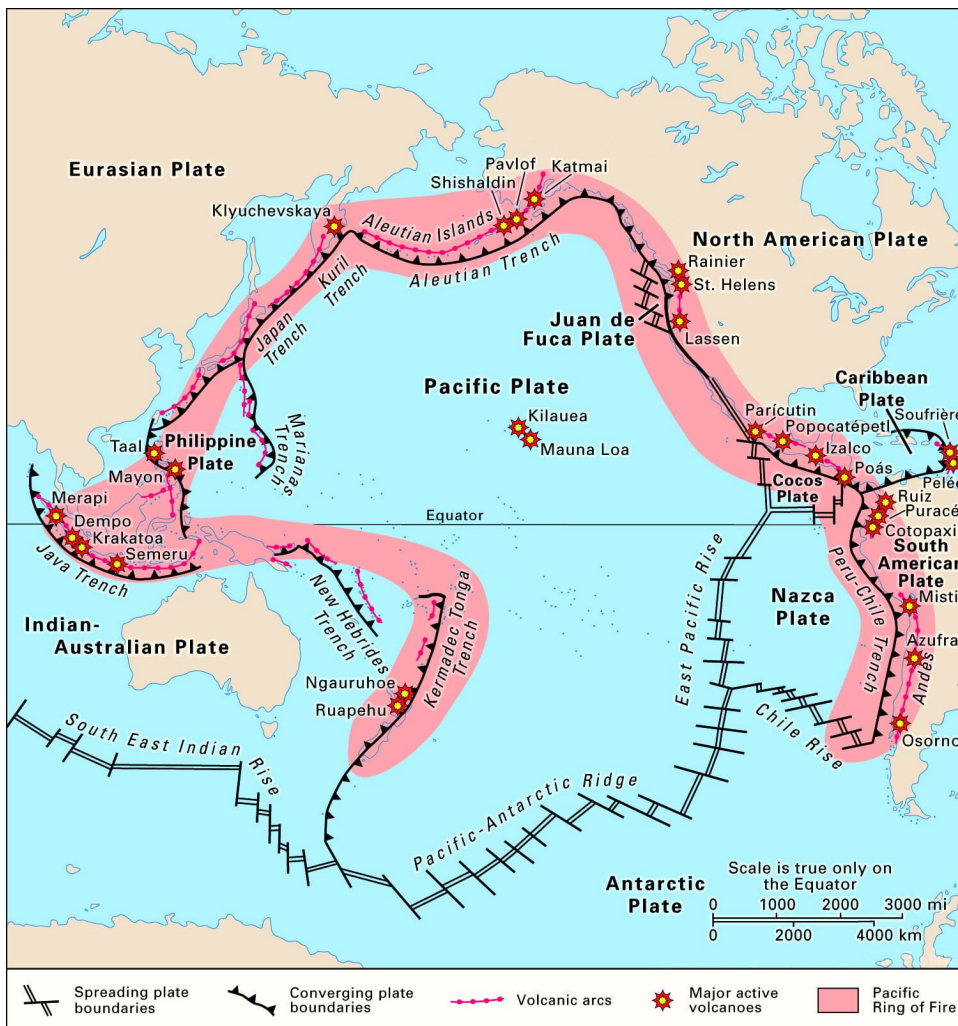
MAIA is a satellite instrument that will collect data to examine the health effects of different types of air pollution. It will use **measurements of sunlight reflecting off airborne particles to determine the abundance, size, chemical composition, and optical properties of pollutants** in the atmosphere. The data will be collected from sensors on the ground and atmospheric models. These **results will then be related to respiratory and cardiovascular diseases, adverse reproductive outcomes, human birth, death and hospitalisation** records to understand impacts of contaminated air we breathe.

The observatory will consist of the **PLATiNO-2 satellite**, which ASI will provide. The observatory's science instrument contains a **pointable spectropolarimetric camera**, which captures digital images at multiple angles in the ultraviolet, visible, near-infrared and shortwave infrared portions of the electromagnetic spectrum.

Read More: [Aerosols](#)

Indonesia's Merapi Volcano Erupted

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[Merapi \(Mountain of Fire\)](#) is the **most active of more than 120 active volcanoes in Indonesia** and has repeatedly erupted with lava and gas clouds recently. It rises to **2,911 metres** and has steep slopes with dense vegetation on its lower sides. It is located near the centre of the island of Java and Indonesia's cultural capital, Yogyakarta. Its **last major eruption in 2010** killed 347 people and displaced 20,000 villagers.

Indonesia, an archipelago of 270 million people, is **prone to earthquakes and volcanic activity** because it sits along the **"Ring of Fire,"** a horseshoe-shaped series of **seismic fault lines around the Pacific Ocean**. An eruption in December 2021 of [Mount Semeru](#), the highest volcano on Java island, left 48 people dead and 36 missing.

World's Fastest Single-shot Laser Camera

Scientists from **Germany and the US** have built the **world's fastest single-shot laser camera** - 1,000x faster than its predecessors at capturing extremely short-lived events. They used the camera to provide the **most precise view yet of how a hydrocarbon flame produces soot**.

The device's technique is called **laser-sheet compressed ultrafast photography (LS-CUP)** combining laser sheet imaging with compressed sensing on a standard streak camera system. It "can resolve a plane of a three-dimensional object like a flame or spray or any turbid media and can "resolve physical or chemical processes" in space and time. It can capture images at **12.5 billion frames per second (fps)**.

Their device can also be used to photograph shockwaves in nuclear reactors, combustion of fine sprays, and an enigmatic process called sonoluminescence (sometimes, when excited by sound, bubbles in a liquid implode and release light at a temperature of ~10,000 K), all of which involve **processes that happen in a few nanoseconds**. However, the technology can be cost intensive.

Read More: [Soot \(Black Carbon\)](#)

Maritime Partnership Exercise (MPX) With French Navy

Indian Navy's **indigenously built guided missile frigate, INS Sahyadri participated in a Maritime Partnership Exercise (MPX)** with French Navy (FN) ships in the **Arabian Sea in March 2023.**

The exercise witnessed a wide spectrum of evolutions at sea which included cross deck landings, boarding exercises and seamanship evolutions. The seamless conduct of the exercise reaffirmed the interoperability and high level of cooperation between the two navies.

INS Sahyadri is fitted with state-of-the-art weapons and sensors, which makes it **capable of detecting and neutralising air, surface and sub-surface threats.** The ship is a part of Indian Navy's Eastern Fleet based at Visakhapatnam.

Also, India-France joint Military exercise **FRINJEX-2023** was recently conducted in **Kerala.** Theme of the FRINJEX was **'Humanitarian assistance and Disaster relief operations in contested environment.'**

[Other India France Exercises](#) include **Varuna** (Naval exercise), **Garuda** (Air exercise), **Shakti** (Army exercise), **Desert Knight-21** (Air exercise).

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