# Soviet-era Cosmos 482 spacecraft set for fiery uncontrolled re-entry in May 2025



A piece of space debris from the Soviet-era spacecraft Cosmos 482 is poised to make an uncontrolled re-entry into Earth's atmosphere, anticipated to occur between May 9 and 13, 2025. Originally launched in 1972 as part of the Soviet Venera project aimed at Venus, Cosmos 482 failed to achieve its intended trajectory due to a launch malfunction. As a result, it has remained in low Earth orbit for over five decades, undergoing a slow trajectory decay that has kept scientists and space enthusiasts alike on alert.

The exact size and shape of Cosmos 482 remain somewhat enigmatic, although it is estimated to weigh more than 1,000 pounds. Its design was intended to withstand the extreme pressures and temperatures found on Venus, which gives it a unique status amongst space debris, as such structures are more likely to survive re-entry than many other types of satellites. Researchers suggest that the spacecraft could descend between the latitudes of 52° North and 52° South, an area that includes significant landmasses across Africa, South America, and parts of Europe and Asia. However, it's likely to fall predominantly into oceans or sparsely populated regions. Initial predictions indicate a possible impact speed of around 150 miles per hour, highlighting that Cosmos 482's durable, titanium-coated structure could survive the fiery descent.

Despite the minimal risk to life on the ground, concerns have been raised about potential hazards if any debris is recovered. Experts advise caution, given that the equipment aboard could contain volatile materials. Dr Marlon Sorge, a specialist in space debris, echoed these precautions, urging the public to refrain from attempting to approach any debris and to alert authorities instead. "Please don't mess with it," he stated emphatically.

The risks associated with debris re-entry, like that of Cosmos 482, are considerably low, calculated to be roughly 1 in 25,000. These statistics place the risk of encountering falling debris on par with that of being struck by lightning. This situation underscores an ongoing issue within space exploration; while advancements have been made in managing space debris, historical objects like Cosmos 482 remind us of the long-lasting impact of human activity in space and the need for continued vigilance and dialogue on debris mitigation.

From the outset, the Venera program aimed to gather significant insights about Venus, generating a series of missions over the 1970s and 1980s that provided valuable data about the planet's hostile atmospheric conditions. The legacy of such missions carries on, not just in scientific knowledge but also in the remnants of failed ventures. As the global community navigates the ramifications of space debris, the plight of Cosmos 482 serves as a stark reminder of the complex interplay between ambition in space exploration and the potential risks it poses.

Ultimately, as we inch closer to the predicted re-entry of Cosmos 482, authorities from various space agencies, including NASA and the European Space Agency, will continue to monitor its trajectory closely, providing updates as necessary to keep the public informed and safe. The event will not only mark the demise of a piece of Soviet engineering but also encapsulate a long chapter in the history of space exploration that oscillates between triumph and caution.

**Reference Map**1: Paragraph 1
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Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

* <https://www.rnz.co.nz/news/world/560567/a-soviet-era-spacecraft-that-failed-to-reach-venus-is-due-to-crash-back-to-earth-this-week> - Please view link - unable to able to access data
* <https://www.rnz.co.nz/news/world/560567/a-soviet-era-spacecraft-that-failed-to-reach-venus-is-due-to-crash-back-to-earth-this-week> - An article from RNZ News reports that a piece of a Soviet spacecraft, Cosmos 482, which malfunctioned en route to Venus over 50 years ago, is expected to re-enter Earth's atmosphere around May 10, 2025. The exact size and shape of the debris are unknown, and while most space debris disintegrates upon re-entry, Cosmos 482's heat shield may allow it to survive and reach the ground. The risk to people on the ground is minimal, but caution is advised if debris is found.
* <https://apnews.com/article/9b03a9b92a52e3ef49b8dcf622da86ec> - The Associated Press reports that Kosmos 482, a Soviet-era spacecraft launched in 1972 as part of the USSR’s Venera program intended for Venus, is projected to re-enter Earth’s atmosphere this weekend after 53 years in orbit. Weighing over 1,000 pounds and covered in titanium, the spherical 3-foot-wide spacecraft is expected to partially survive the fiery descent, although it will likely fall in the ocean or an unpopulated area, minimizing risk to people. Scientists estimate the impact speed could reach 150 mph if it remains intact. The spacecraft remained in Earth's orbit due to a rocket malfunction during launch. Its failed parachutes and dead batteries render controlled descent impossible. Final descent is predicted for early Saturday, though precise timing and location remain uncertain due to variables like solar activity and the spacecraft’s deteriorated state. Any surviving wreckage, per international treaty, will be the property of Russia.
* <https://time.com/7283460/soviet-spacecraft-plunging-back-to-earth-what-to-know/> - Time magazine provides an overview of Kosmos 482, a Soviet spacecraft launched in 1972 as part of the Venera missions aimed at studying Venus. Due to a malfunction, it failed to achieve its interplanetary trajectory and has remained in Earth orbit for 53 years. The spacecraft is expected to re-enter Earth's atmosphere uncontrolled between May 9 and 11, 2025. Designed to endure Venus’s extreme atmospheric conditions, its durable build makes it more likely to survive re-entry compared to typical satellites. Weighing about 1,100 pounds (500 kg), Kosmos 482 is expected to descend over areas between 52° North and South latitude, a zone that includes much of the inhabited world. Experts note the impact risk is low—similar to that of a meteorite—but not absent. While the most probable outcome remains a safe ocean splashdown or disintegration in the atmosphere, some debris could land in sparsely populated regions. The spacecraft’s return symbolizes a closing chapter in Soviet space history, now decades after the dissolution of the USSR.
* <https://elpais.com/ciencia/2025-05-07/las-agencias-espaciales-vigilan-la-trayectoria-de-la-cosmos-482-la-sonda-sovietica-perdida-caera-a-la-tierra-como-una-piedra.html> - El País reports that the Soviet spacecraft Cosmos 482, launched in 1972 with the aim of landing on Venus, has remained in Earth's orbit for over half a century due to a launch failure. Designed to withstand the extreme pressures of Venus's atmosphere, there are concerns that it could survive re-entry into Earth's atmosphere, which is expected around the early hours of Saturday, May 10, 2025. The spacecraft weighs half a ton and has a diameter of one meter. Its trajectory places it in a low orbit covering almost the entire planet, except for the poles, making the exact impact location unpredictable. While the probability of impact in inhabited areas is very low, major space agencies, including the ESA and NASA, are closely monitoring its re-entry. The possibility of damage is minimal: the spacecraft will descend at about 300 meters per second, without explosion, and preliminary predictions estimate its fall between 14:18 on Friday and 2:18 on Sunday, peninsular time. It is more likely to fall into the ocean than on land. In 70 years of space activity, no such impact on humans has been recorded.
* <https://as.com/actualidad/sociedad/cuando-impactara-el-satelite-sovietico-en-la-tierra-posibles-fechas-y-todo-lo-que-se-sabe-sobre-el-kosmos-482-n/> - AS.com reports that the Soviet satellite Kosmos 482, launched in 1972, failed to complete its mission and is now expected to re-enter Earth's atmosphere between May 9 and 13, 2025, after 53 years in orbit. Due to solar activity, experts cannot yet determine the exact date or impact location, though they consider it likely to fall into an ocean. Unlike other satellites, this probe was designed to operate on Venus, so its components could withstand atmospheric re-entry. This event highlights the growing problem of space debris, with the European Space Agency reporting that nearly three large objects re-enter the atmosphere daily, some of which reach inhabited areas, as occurred in Florida in 2024.
* <https://cadenaser.com/nacional/2025/05/09/expectacion-por-la-caida-de-la-sonda-sovietica-kosmos-482-este-sabado-todavia-no-se-sabe-donde-se-estrellara-cadena-ser/> - Cadena SER reports that the Soviet spacecraft Kosmos 482, launched 53 years ago with the goal of landing on Venus, is set to re-enter Earth's atmosphere this Saturday, generating global anticipation. The capsule, a Venera-type descent vehicle, never reached its destination due to a launch failure that prevented it from escaping Earth's gravity. The European Space Agency (ESA) has reported that the impact is expected to occur on May 10 at 8:26 (Spanish peninsular time), although the exact impact location remains unknown. It is known that it will fall within a point between 52° North and 52° South parallels, covering a wide strip of the planet. There is a minimal possibility that the remains will fall in regions of Galicia or Andalusia in Spain. The situation generates both interest and concern among the population, given the uncertainty of its final impact point. The ESA will continue to update predictions as the re-entry moment approaches.