

## Battery Pallet Known as Space Junk Reenters Earth's Atmosphere from ISS.

### Description



The cargo pallet after being propelled into space by the Canadarm2 robotic arm in 2021. Photo credit: NASA

On a fateful Friday, March 8, a substantial pallet of utilised energy units from the International Space Station (ISS) hurtled back into Earth's atmosphere over the serene waters of the Gulf of Mexico, marking the finale of its rather unpredictable journey across the orbital route.

The densely packed pallet, comprising nine substantial batteries, struck an impressive scale on the heaviness measure, tipping it at 2.9 tons. The pallet had been set off on its trajectory by the Canadarm2 robotic arm's activity in March 2021. Following its release, it has been meandering towards Earth in a wildly uncontrolled descent. The tumultuous plunge culminated last week when the pallet was apprehended by Earth's gravitational pull at around 3:29 p.m. ET, somewhere in the airspace above the scenic locales of Cancun and Cuba. This information is courtesy of Jonathan McDowell, an astrophysicist who has kept a dedicated eyeball on the progression of the orbital piece of refuse

However, a lingering query remains unanswered - did the entire pallet incinerate upon reentry into Earth's atmosphere, or did some parts resist the scorching heat, prevailing to reach the ground? The European Space Agency (ESA), which has likewise been keeping vigil over the pallet's journey, hypothesised that there was a possibility for some fragments to reach the Earth while stressing that the probability of it inflicting harm upon a human was significantly low. As yet, there have been no reports concerning any



injury to humans or damage to property.

Interestingly, the pallet created a record of sorts by virtue of being the largest object ever forcibly ejected from the ISS. A Japanese cargo spacecraft was instrumental in launching it towards the space station in May 2020. Its fundamental purpose was to facilitate astronauts in swapping the antiquated nickel-hydrogen batteries with newer, substantially efficient lithium-ion counterparts, which would store energy generated by the station's solar arrays.

Surprisingly, the expired batteries were not destined for this end. Their planned journey was intended to take them into a Japanese HTV cargo vessel, which was to assume responsibility for their suitable disposal. Due to an overwhelming assembly line of similar equipment awaiting disposal from the ISS, NASA resorted to the unusual step of propelling the pallet into space utilising the station's robotic arm, an action that ultimately led to the uncontrolled reentry.

The careening descent of colossal entities such as the battery pallet is a rather infrequent occurrence; universally, most objects that do confront their doom via Earth's atmosphere usually disintegrate with no tangible remnants left behind. As a standard mandate, space authorities universally accept a 1-in 10,000 likelihood for the casualty risk of a singular uncontrollable descent, as mentioned by ESA. However, as the space industry burgeons, maintaining adherence rules might become increasingly complex, potentially catalysing the inception of novel regulations.

With an eye towards more celestial wonders and unbridled voyages across the universe, do follow us on X and make a point to bookmark Gizmodo's dedicated section - 'Spaceflight'.

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## Vocabulary List:

1. **Descent** // (noun): The act of moving downward dropping or falling.
2. **Orbital** // (adjective): Relating to an orbit the circular or elliptical path of an object around a celestial body.
3. **Uncontrolled** // (adjective): Not under control or restriction.
4. **Fragment** // (noun): A small part broken or separated off something.
5. **Efficient** // (adjective): Performing or functioning in the best possible manner with the least waste of time and effort.
6. **Catalyze** // (verb): To be the cause of a process by acting as a catalyst.

## Vocabulary quizzes

### Multiple Choice ( Select the Correct answer for each question. )

1. Which word is defined as a puzzle or a mystery?  
Option: Comprehension  
Option: Dominion  
Option: Enigma  
Option: Quotient
2. Which word means causing great happiness and excitement?  
Option: Efficient  
Option: Exhilarating  
Option: Descent  
Option: Triumph
3. Which word can refer to a large or impressive grouping or collection?  
Option: Luminary  
Option: Postulate  
Option: Array  
Option: Anticipated
4. Which word can describe something related to an orbit or rotation?  
Option: Anticipated  
Option: Meteorological  
Option: Orbital  
Option: Fragment



5. Which word is typically used to refer to a range of colors or choices available?

- Option: Palette
- Option: Concurrent
- Option: Amplified
- Option: Uncontrolled

6. Which word means a serious and determined effort towards a goal?

- Option: Burgeoning
- Option: Endeavor
- Option: Auspicious
- Option: Microscopic

7. Which word means to suggest or assume the existence fact or truth of something as a basis for reasoning discussion or belief?

- Option: Synchronize
- Option: Anticipated
- Option: Postulate
- Option: Incandescent

8. Which word means a small part broken off or detached?

- Option: Efficient
- Option: Fragment
- Option: Uncontrolled
- Option: Levitational

9. Which word refers to sovereignty or control?

- Option: Amplified
- Option: Burgeoning
- Option: Dominion
- Option: Luminary

10. Which word means to accelerate or spark a process?

- Option: Concurrent
- Option: Catalyze
- Option: Array
- Option: Array

**Gap-Fill ( Fill in the blanks with the correct word from the vocabulary list. )**

11. Albert Einstein was known as a scientific \_\_\_\_\_ .



12. The team celebrated their \_\_\_\_\_ in the championship match.
13. To study the cell structure scientists use \_\_\_\_\_ equipment.
14. The fire quickly spread due to \_\_\_\_\_ winds.
15. To save energy it is important to use \_\_\_\_\_ appliances.
16. The newlyweds found the sunny weather on their wedding day to be \_\_\_\_\_.
17. The release of the new tech gadget was highly \_\_\_\_\_ by fans.
18. The two events will run \_\_\_\_\_ so attendees will have choices to make.
19. The city's tech industry is \_\_\_\_\_ with new startups and innovations.
20. The dancers had to \_\_\_\_\_ their moves to the music for a flawless performance.

**Matching Sentences ( Match each definition to the correct word from the vocabulary list. )**

21. The professor emphasized the importance of studying to increase one's knowledge .
22. The roller coaster ride was so thrilling and that it left everyone screaming with joy.
23. The mountaineers began their treacherous down the icy slope.
24. The satellite was placed in a stable around the Earth.
25. The speaker used a microphone to ensure her voice was to all attendees.
26. The award ceremony celebrated the achievements of several scientists.
27. The new law was intended to positive change in the community.
28. The disappearance of the ancient artifact remains an unsolved in archaeology.
29. The luxurious resort's beachfront location added to its overall .
30. Despite facing numerous challenges the team managed to achieve an incredible .



## Answer

**Multiple Choice:** 1. Enigma 2. Exhilarating 3. Array 4. Orbital 5. Palette 6. Endeavor 7. Postulate 8. Fragment 9. Dominion 10. Catalyze

**Gap-Fill:** 11. Luminary 12. Triumph 13. Microscopic 14. Uncontrolled 15. Efficient 16. Auspicious 17. Anticipated 18. Concurrent 19. Burgeoning 20. Synchronize

**Matching sentence:** 1. Quotient 2. Exhilarating 3. Descent 4. Orbital 5. Amplified 6. Illustrious 7. Catalyze 8. Enigma 9. Allure 10. Triumph

## CATEGORY

1. Sci/Tech - LEVEL6

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