



Polaris Dawn: Bold Step in Private Space Exploration

Description

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An artist's rendering of the spacewalk on the Polaris Dawn mission
SpaceX



SpaceX's Polaris Dawn mission marks a significant advancement in private space flight, showcasing capabilities that have long been possessed by government space agencies. A milestone of the mission was the inaugural spacewalk, also known as an extravehicular activity (EVA), carried out by non-government individuals, Jared Isaacman and Sarah Gillis, rather than traditional government astronauts.

This EVA was notably perilous due to the absence of an airlock in SpaceX's Crew Dragon craft. Evacuating the entire capsule of air was necessary before Isaacman and Gillis could venture into the vacuum of space. The absence of seasoned astronauts on the crew, coupled with the debut of SpaceX's new spacesuits and spacecraft in this scenario, further heightened the risk.

While the feat might seem unremarkable compared to the routine EVAs conducted on the International Space Station (ISS), SpaceX's emphasis on safety and meticulous preparation is commendable. Laura Forczyk, a respected figure in the space industry, highlights the significance of undertaking new challenges, regardless of past accomplishments in the field.

The recent "stand-up spacewalk" by Isaacman and Gillis raised some public scrutiny, as the astronauts did not fully exit the capsule. Despite this, the successful testing of the new suits holds promise for the future of human space exploration. Additionally, the crew's involvement in a series of health experiments aims to shed light on the physiological impact of space travel.

As civilian space missions like Polaris Dawn pave the way for diverse datasets in space health research, the potential for broader participation in space endeavors grows. By pushing boundaries and fostering innovation, SpaceX heralds a new chapter in space exploration, challenging the dominance of government space agencies.

Vocabulary List:

1. **Extravehicular** /ˌɛk.strə.vɪˈhɪk.jə.lər/ (adjective): Occurring or being outside the confines of a vehicle especially in space.
2. **Milestone** /ˈmaɪl.stoʊn/ (noun): An important event or stage in the development of something.
3. **Vacuum** /ˈvæk.ju:m/ (noun): A space devoid of matter particularly air.
4. **Meticulous** /məˈtɪk.jə.ləs/ (adjective): Showing great attention to detail; very careful and precise.
5. **Physiological** /ˌfɪz.i.əˈlɒdʒ.ɪ.kəl/ (adjective): Relating to the branch of biology that deals with the normal functions of living organisms and their parts.
6. **Perilous** /ˈpɛr.ɪ.ləs/ (adjective): Full of danger or risk.

Comprehension Questions



Multiple Choice

1. Which individuals carried out the inaugural spacewalk on SpaceX's Polaris Dawn mission?
Option: Jared Isaacman and Sarah Gillis
Option: Seasoned astronauts
Option: Government space agencies
Option: Laura Forczyk
2. What was notably perilous about the EVA on SpaceX's Polaris Dawn mission?
Option: Absence of an airlock in the Crew Dragon craft
Option: Participation of seasoned astronauts
Option: Use of traditional spacesuits
Option: Routine testing on the International Space Station
3. Who highlighted the significance of undertaking new challenges in the space industry?
Option: Laura Forczyk
Option: Jared Isaacman
Option: Sarah Gillis
Option: Government space agencies
4. What did the recent "stand-up spacewalk" by Isaacman and Gillis aim to test?
Option: New spacesuits
Option: Gravity on Mars
Option: Use of airlock in spacewalks
Option: Biological experiments in space
5. What impact do civilian space missions like Polaris Dawn have on space health research?
Option: Pave the way for diverse datasets
Option: Limit the scope of research
Option: Increase government control
Option: Hinder innovation
6. What does the involvement of the crew in health experiments aim to shed light on?
Option: Physiological impact of space travel
Option: Astrological phenomena
Option: Alien life forms
Option: Space debris



Answer

Multiple Choice: 1. Jared Isaacman and Sarah Gillis 2. Absence of an airlock in the Crew Dragon craft 3. Laura Forczyk 4. New spacesuits 5. Pave the way for diverse datasets 6. Physiological impact of space travel

Vocabulary quizzes

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

1. What is the efficient use of resources called?

- Option: Transformation
- Option: Utilization
- Option: Disposal
- Option: Creation

2. What term refers to being open and honest in actions?

- Option: Opacity
- Option: Transparency
- Option: Evasion
- Option: Secrecy

3. What word describes a substance that causes gradual damage by chemical reactions?

- Option: Innocuous
- Option: Neutral
- Option: Resilient
- Option: Corrosive

4. Which term relates to the functioning of a machine or system?

- Option: Theoretical
- Option: Functional
- Option: Operational
- Option: Inactive

5. What is the ability to produce a desired effect or result called?

- Option: Inefficacy
- Option: Efficiency
- Option: Efficacy
- Option: Ineffectiveness



6. Which term best describes introducing new ideas or methods?

- Option: Conventional
- Option: Predictable
- Option: Standard
- Option: Innovative

7. What term is related to the functions and activities of living organisms?

- Option: Psychological
- Option: Biological
- Option: Physical
- Option: Physiological

8. What are difficulties that test one's abilities or resources called?

- Option: Rewards
- Option: Obstacles
- Option: Facilitators
- Option: Challenges

9. Which term describes showing no signs of stopping or lessening?

- Option: Merciful
- Option: Relentless
- Option: Kind
- Option: Compassionate

10. What is the state of being more powerful or noticeable than others called?

- Option: Equality
- Option: Submissiveness
- Option: Dominance
- Option: Equivalence

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

- 11. _____ is essential for resolving conflicts peacefully.
- 12. The project launch date was eagerly _____ by the entire team.
- 13. The decision had far-reaching _____ on the company's future.
- 14. Effective risk management strategies help _____ potential damages.
- 15. The transformation journey towards sustainability requires dedication and effort.



16. The unexpected _____ in the plot kept the audience engaged.
17. The discovery of a new species holds great _____ for the field of biology.
18. Astronauts conduct _____ activities during spacewalks outside the spacecraft.
19. The mountain climbers faced _____ conditions as they ascended.
20. Efficient resource _____ is crucial for sustainability.

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

21. The artist's workshop was a space where new ideas flourished.
22. The government enacted new measures to protect the environment.
23. is the process of using electricity to break down a compound.
24. The jeweler was known for his attention to detail in crafting each piece.
25. Graduating from college was a significant in her academic journey.
26. A is a space entirely devoid of matter.
27. Interactive learning activities students in the classroom.
28. Winning the award was a well-deserved for his hard work.
29. The sudden loss of a loved one sent waves throughout the community.
30. Effective between team members leads to better collaboration.

Answer

Multiple Choice: 1. Utilization 2. Transparency 3. Corrosive 4. Operational 5. Efficacy 6. Innovative
7. Physiological 8. Challenges 9. Relentless 10. Dominance

Gap-Fill: 11. Dialogue 12. anticipated 13. implications 14. mitigate 15. Journey 16. twist 17. significance
18. extravehicular 19. perilous 20. utilization

Matching sentence: 1. Generative 2. Regulatory 3. Electrolysis 4. Meticulous 5. Milestone 6. Vacuum 7.
Engage 8. Accolade 9. Shock 10. Dialogue



CATEGORY

1. Sci/Tech - LEVEL5

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