New Simulation Reveals Voyager 1’s Incredible Speed

Description

The Voyager 1 satellite is one of the fastest human-made objects, travelling at 38,026.79 mph (17.0 km/s). Currently, it is about 15 billion miles away from Earth, making it also the most distant human-made object in space.

Launched in 1977, Voyager 1 is nearly 50 years old and has provided valuable information about the outer Solar System. It has successfully passed by Jupiter and Saturn, including Saturn’s largest moon, Titan. The satellite was originally designed to study these planets, and its mission has been highly successful.

NASA is uncertain how much longer Voyager 1 will remain operational. After 2036, the probe is expected to be out of reach of the Deep Space Network, which helps communicate with distant spacecraft. This means that, while the satellite will still be in space, scientists may no longer be able to send or receive messages from it.

NASA launched both Voyager 1 and Voyager 2 in 1977 because of a unique alignment of the planets called Syzygy. This alignment allowed the probes to travel past key planets like Jupiter and Saturn in a single mission. Interestingly, although Voyager 2 was launched first, Voyager 1 has travelled much further. By February 2026, it is projected to be about 2.5 billion miles further away from Earth than Voyager 2.

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Vocabulary List:

1. **Satellite** /ˈsæt.əl.aɪt/ (noun): An object that orbits around a planet.
2. **Voyager** /ˈvɔɪ.ɪ.dʒər/ (noun): A type of spacecraft exploring space.
3. **Fastest** /ˈfɑː.stɪst/ (adjective): Moving at high speed.
4. **Human-made** /ˌhjuː.mən ˈmeɪd/ (adjective): Created by people not nature.
5. **Distance** /ˈdɪs.təns/ (noun): The space between two points.
6. **Operational** /ˌɒp.ərˈeɪ.ʃən.əl/ (adjective): Able to work or function.

Comprehension Questions

Multiple Choice

1. What is the speed of Voyager 1?

Option: 30,000 mph
Option: 38,026.79 mph
Option: 50,000 mph
Option: 25,000 mph

2. In what year was Voyager 1 launched?

Option: 1975
Option: 1977
Option: 1980
Option: 1985

3. Which moon did Voyager 1 pass by?

Option: Io
Option: Europa
Option: Titan
Option: Ganymede

4. How far is Voyager 1 from Earth approximately?

Option: 10 billion miles
Option: 12 billion miles
Option: 15 billion miles
Option: 20 billion miles

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5. What is the unique alignment of planets that allowed the launch of Voyager 1 and 2?

Option: Conjunction
Option: Syzygy
Option: Opposition
Option: Transit

6. By February 2026, how much further is Voyager 1 expected to be compared to Voyager 2?

Option: 1 billion miles
Option: 2.5 billion miles
Option: 3 billion miles
Option: 5 billion miles

True-False

7. Voyager 1 has travelled faster than any other human-made object.

8. Voyager 1 was launched before Voyager 2.

9. After 2036, Voyager 1 will still be able to communicate with Earth.

10. Voyager 1's mission was originally designed to study Jupiter and Saturn.

11. Voyager 1 is currently operational for nearly 50 years.

12. Voyager 1 and Voyager 2 launched due to the alignment of planets is known as synergy.

Gap-Fill

13. Voyager 1 is travelling at a speed of _____ mph.

14. The distance of Voyager 1 from Earth is approximately _____ billion miles.

15. The unique alignment of the planets is called _____ which allowed the launch of Voyager spacecraft.

16. Voyager 1 was launched in the year _____ 1977.

17. The probe is expected to be out of reach of the Deep Space Network after _____ 2036.

18. By February 2026, Voyager 1 is projected to be _____ billion miles further from Earth than Voyager 2.

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Answer

Multiple Choice: 1. 38,026.79 mph 2. 1977 3. Titan 4. 15 billion miles 5. Syzygy 6. 2.5 billion miles
True-False: 7. True 8. False 9. False 10. True 11. True 12. False
Gap-Fill: 13. 38,026.79 14. 15 15. Syzygy 16. in 17. the end of 18. 2.5

Vocabulary quizzes

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

1. What is the primary function of chlorophyll in plants?

   Option: Photosynthesis
   Option: Respiration
   Option: Nutrient absorption
   Option: Water storage

2. What is the primary role of astronauts in a space mission?

   Option: Drive the rocket
   Option: Conduct research and experiments
   Option: Develop software
   Option: Build spacecraft

3. What is a meteorite?

   Option: A glowing comet
   Option: A space rock that lands on Earth
   Option: An asteroid belt
   Option: A satellite

4. What does high-resolution typically refer to in imaging?

   Option: Low-quality images
   Option: Detailed and clear images
   Option: Black and white images
   Option: Blurry images

5. Which term describes modern humans and their closest extinct relatives?

   Option: Primate
   Option: Hominin
   Option: Anatomically modern human
   Option: Neanderthal

6. Fossils provide evidence of what?

   Option: Climate change
   Option: Ancient life forms
   Option: Soil composition
   Option: Water sources

7. In archaeology what does reconstruction typically involve?

   Option: Building new structures
   Option: Restoring ancient artifacts
   Option: Creating a visual model of past events

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Option: Excavating new sites

8. What is the primary purpose of the Voyager spacecraft?

Option: To study Mars
Option: To explore the outer Solar System
Option: To orbit Earth
Option: To land on the Moon

9. What is a critical phase in a space mission that involves returning to Earth?

Option: Liftoff
Option: Launch
Option: Landing
Option: Docking

10. What is the primary goal of detecting in scientific research?

Option: Identifying unknown variables
Option: Acquiring data
Option: Measuring distances
Option: Collecting samples

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

11. In a criminal case _____ are responsible for presenting the case against the defendant.

12. A _____ is commonly used in construction sites to dig trenches and move soil.

13. A _____ orbits the Earth and collects various types of data for weather forecasting.

14. The _____ holds and protects the brain within the skull.

15. The students were _____ when they learned about their upcoming field trip to the space center.

16. The gold _____ found in the stream was worth a small fortune.

17. The space _____ aimed to explore the possibility of life on other planets.

18. Once the satellite was _____ it began transmitting data back to Earth.

19. In a scientific experiment _____ are used as benchmarks to compare with

experimental results.

20. The geologist examined the _____ to determine its age and composition.

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

21. The skull protects the brain and supports the structures of the face.
22. Plants use chlorophyll to absorb light energy for photosynthesis.
23. High-resolution images allow scientists to study details that are not visible in standard images.
24. The crew of the spacecraft will conduct research during their time in orbit.
25. The study of hominin fossils provides insight into human evolution.
26. Fossils can reveal information about ancient environments and life forms.
27. After the excavation the artifacts were carefully reburied to preserve their condition.
28. The mission to Mars aims to find signs of past life on the planet.
29. Detecting faint signals from space is crucial for astronomy research.
30. The landing of the spacecraft was successful marking a milestone in the mission.

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Answer

Multiple Choice: 1. Photosynthesis 2. Conduct research and experiments 3. A space rock that lands on Earth 4. Detailed and clear images 5. Hominin 6. Ancient life forms 7. Creating a visual model of past events 8. To explore the outer Solar System 9. Landing 10. Acquiring data
Gap-Fill: 11. prosecutors 12. backhoe 13. satellite 14. braincase 15. excited 16. nugget 17. mission 18. operational 19. control samples 20. rock
Matching sentence: 1. skull 2. chlorophyll 3. high-resolution 4. crew 5. hominin 6. fossils 7. reburied 8. mission 9. detecting 10. landing

CATEGORY

1. Sci/Tech - LEVEL4

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3. Level 4
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5. simulation
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