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# NASA Records Record-Breaking Volcanic Outburst on Jupiter Moon Io

## Description

NASA's Juno spacecraft has provided new images giving us a clearer insight into Io's unique nature. It is renowned as the most volcanically active world within our Solar System, boasting over 400 active volcanoes.

Juno has undertaken multiple flybys of Io, with its latest images revealing a massive hotspot near the moon's south pole. Originally sent to study Jupiter, Juno's mission was extended by NASA, with the spacecraft currently conducting flybys of three of Jupiter's Galilean moons: Ganymede, Europa, and Io.

During the recent flyby, Juno's JIRAM instrument captured images of a volcanic hotspot at Io's south pole, surpassing even Lake Superior in size. The eruptions from this hotspot were measured to be six times more powerful than all of Earth's power plants combined, emitting over 80 trillion watts of radiant energy.

"The data indicates that this is the most intense volcanic eruption ever recorded on Io." -  
Alessandro Mura, Juno co-investigator, National Institute for Astrophysics in Rome

Juno's principal investigator, Scott Bolton, expressed amazement at the data collected, highlighting that this event showcases the most powerful volcanic activity on the most volcanically active world in our solar system.

Io's volcanic activity is a result of tidal heating caused by its proximity to Jupiter. This phenomenon leads to the moon's surface being constantly reshaped by molten rock, creating a dynamic and ever-changing landscape.

Juno's upcoming flyby on March 3rd aims to further study the hotspot and any surface alterations. The long-term evolution of Io's volcanism is a subject of ongoing research, shedding light not only on Io but also on volcanic processes on other celestial bodies.

**Original article:** [Juno Sees a Massive Hotspot of Volcanic Activity on Io](#)



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## Vocabulary List:

1. **Spacecraft** /'speɪs.kræft/ (noun): A vehicle designed for travel or operation in outer space.
2. **Volcanically** /vɒl'keɪ.nɪ.kli/ (adverb): In a manner relating to or caused by volcanoes.
3. **Hotspot** /'hɒt.spɒt/ (noun): A location where significant geologic activity such as volcanic activity is concentrated.
4. **Eruptions** /ɪ'rʌp.jənz/ (noun): Occurrences where volcanic material is expelled from a volcano.
5. **Radiant** /'reɪ.di.ənt/ (adjective): Emitting or reflecting light; shining.
6. **Phenomenon** /fə'nɒ.mə.nən/ (noun): An observable event or occurrence especially one that is remarkable or extraordinary.

## Vocabulary quizzes

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

1. Which term describes a state of conflict or disorder?  
Option: Turbulent  
Option: Forecasting  
Option: Innovations  
Option: Sequestering
2. What type of vehicle is designed for travel or operation in outer space?  
Option: Coronal  
Option: Spacecraft  
Option: Phenomenon  
Option: Dehydration
3. Which term describes something related to volcanic activity?  
Option: Vulnerable  
Option: Radiant  
Option: Volcanically  
Option: Fatigue
4. What term is used to describe actions that make something less severe harmful or painful?  
Option: Microbreaks  
Option: Emitting  
Option: Mitigating  
Option: Sustainable



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5. Which term means containing a high amount of water or fluid?
- Option: Emitting
  - Option: Electrolyte
  - Option: Hydrated
  - Option: Concoction
6. What is the term for the process of forcing something out typically in a violent manner?
- Option: Dynamics
  - Option: Ejections
  - Option: Sequestering
  - Option: Alleviate
7. Which term refers to a location on the Earth's surface that is prone to volcanic activity?
- Option: Subsequent
  - Option: Alleviate
  - Option: Fatigue
  - Option: Hotspot
8. What term is used to describe something emitting or reflecting light?
- Option: Forecasting
  - Option: Radiant
  - Option: Vulnerable
  - Option: Comprehensive
9. Which term refers to the harmful reduction of the body's water content?
- Option: Volcanically
  - Option: Dehydration
  - Option: Imperative
  - Option: Emerging
10. What is the term for isolating or hiding away something?
- Option: Emissions
  - Option: Sequestering
  - Option: Dynamics
  - Option: Emphasize

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

11. \_\_\_\_\_ storms can affect power grids and satellite communications.
12. Continuous research leads to technological \_\_\_\_\_ that improve our daily lives.
13. A \_\_\_\_\_ study of the impact of climate change is necessary for effective policy-



making.

14. Prolonged physical or mental exertion can lead to extreme \_\_\_\_\_.
15. Taking short \_\_\_\_\_ during work hours can boost productivity.
16. The earthquake was followed by several \_\_\_\_\_ aftershocks.
17. Applying a cold compress can help \_\_\_\_\_ the pain and swelling.
18. It is important to \_\_\_\_\_ the significance of sustainable practices.
19. Finding \_\_\_\_\_ solutions is crucial for environmental conservation.
20. Proper hydration is \_\_\_\_\_ for overall health and wellbeing.

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

21. Solar flares and prominences are associated with the layer of the Sun's atmosphere.
22. Meteorologists use various tools and models for weather .
23. Endangered species are more to habitat destruction and climate change.
24. The study of the of ocean currents helps in understanding climate patterns.
25. Greenhouse gases trap heat by infrared radiation.
26. Auroras are natural light visible in the polar regions.
27. Mount St. Helens is an example of a active region in the United States.
28. Stars appear in the night sky due to their light emission.
29. The chef created a unique culinary that combined unexpected ingredients.
30. Sports drinks help in levels in the body after intense physical activity.

## Answer

**Multiple Choice:** 1. Turbulent 2. Spacecraft 3. Volcanically 4. Mitigating 5. Hydrated 6. Ejections 7. Hotspot  
8. Radiant



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9. Dehydration 10. Sequestering

**Gap-Fill:** 11. Geomagnetic 12. Innovations 13. Comprehensive 14. Fatigue 15. Microbreaks 16. Subsequent  
17. Alleviate 18. Emphasize 19. Sustainable 20. Imperative

**Matching sentence:** 1. Coronal 2. Forecasting 3. Vulnerable 4. Dynamics 5. Emitting 6. Phenomenon  
7. Volcanically 8. Radiant 9. Concoction 10. Electrolyte

## **CATEGORY**

1. Health - LEVEL5

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