



Scanning colossal hailstones in dental office for research

Description

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Amazing 3D images of hailstones' internal structure have been captured for the first time using a dental scanner. Scientists hope this breakthrough will aid in predicting storms that produce large, destructive hailstones.

After a severe storm hit Spain in 2022, researchers at the Meteorological Service of Catalonia obtained



hailstones, some as large as 12 centimetres, which fell during the calamity. By scanning the hailstones, scientists could study the layers of ice within them, offering insights into how they form.

The scanned hailstones revealed surprising details, like off-centre nuclei, indicating their formation process. This information could enhance future hailstorm forecasts by correlating internal structure with radar data.

Opinions on the scans are positive, with Julian Brimelow noting the significance of studying such large hailstones. John Allen plans to conduct a similar study in the US Great Plains in 2025.

This innovative method of scanning hailstones opens up new possibilities for understanding their growth, potentially improving our ability to predict and prepare for hailstorms in the future.

Topics: Hailstones, Meteorology, Storm Forecasting

Vocabulary List:

1. **Hailstones** /'heɪl.stəʊnz/ (noun): Balls or lumps of ice that fall from clouds during a storm.
2. **Structure** /'strʌk.tʃər/ (noun): The arrangement or organization of parts to form a whole.
3. **Calamity** /kə'læm.ɪ.ti/ (noun): An event causing great damage or distress; a disaster.
4. **Formation** /fɔːr'meɪ.ʃən/ (noun): The action of forming or process of being formed.
5. **Correlating** /'kɔːrə.leɪtɪŋ/ (verb): Showing a relationship or connection between two things.
6. **Innovative** /'ɪn.ə.veɪ.tɪv/ (adjective): Introducing or using new ideas or methods.

Comprehension Questions

Multiple Choice

1. What method was used to capture 3D images of hailstones' internal structure for the first time?
Option: Weather balloons
Option: Satellites
Option: Dental scanner
Option: Microscopes
2. In which country did researchers capture images of hailstones for the first time using a dental scanner?
Option: Spain
Option: Italy
Option: France



Option: Germany

3. What size did some of the hailstones reach during the severe storm in Spain?

- Option: 8 centimetres
- Option: 10 centimetres
- Option: 12 centimetres
- Option: 15 centimetres

4. Which researcher plans to conduct a similar study in the US Great Plains in 2025?

- Option: Julian Brimelow
- Option: John Allen
- Option: Daniel Chapman
- Option: Laura Evans

5. What could the information from scanning hailstones potentially enhance?

- Option: Hurricane forecasts
- Option: Drought predictions
- Option: Hailstorm forecasts
- Option: Tornado warnings

6. What new possibilities does the innovative method of scanning hailstones open up according to the text?

- Option: Creating artificial hailstorms
- Option: Understanding their growth
- Option: Generating fake weather reports
- Option: Predicting volcanic eruptions

True-False

7. The hailstones in the images were captured using a microscope.

8. John Allen has already conducted a study in the US Great Plains.

9. The internal structure of hailstones can be correlated with radar data for better forecasts.

10. The scanned hailstones had perfectly centered nuclei.

11. Julian Brimelow has negative opinions on the significance of studying large hailstones.

12. The breakthrough in scanning hailstones is not expected to aid in predicting storms producing large



hailstones.

Gap-Fill

13. After a severe storm hit Spain in 2022, researchers at the Meteorological Service of Catalonia obtained hailstones, some as large as _____ centimetres.

14. John Allen plans to conduct a similar study in the US Great Plains in _____.

15. By scanning the hailstones, scientists could study the layers of ice within them, offering insights into how they _____.

16. The scanned hailstones revealed surprising details, like off-centre nuclei, indicating their formation _____.

17. The breakthrough in scanning hailstones is expected to aid in predicting storms that produce large, destructive _____.

18. This innovative method of scanning hailstones opens up new possibilities for understanding their _____.

Answer

Multiple Choice: 1. Dental scanner 2. Spain 3. 12 centimetres 4. John Allen 5. Hailstorm forecasts
6. Understanding their growth

True-False: 7. False 8. False 9. True 10. False 11. False 12. False

Gap-Fill: 13. 12 14. 2025 15. form 16. process 17. hailstones 18. growth

Answer

CATEGORY

1. Sci/Tech - LEVEL3

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