Scanning colossal hailstones in dental office for research

Description

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** /ˈheɪl.stoʊnz/ (noun): Balls or lumps of ice that fall from clouds during a storm.
2. **Structure** /ˈstrʌk.tʃər/ (noun): The arrangement or organization of parts to form a whole.
3. **Calamity** /kəˈlæm.ɪ.ti/ (noun): An event causing great damage or distress; a disaster.
4. **Formation** /fɔːrˈmeɪ.ʃən/ (noun): The action of forming or process of being formed.
5. **Correlating** /ˈkɔːrə.leɪtɪŋ/ (verb): Showing a relationship or connection between two things.
6. **Innovative** /ˈɪn.ə.veɪ.t̬ɪv/ (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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Author

aimeeyoung99