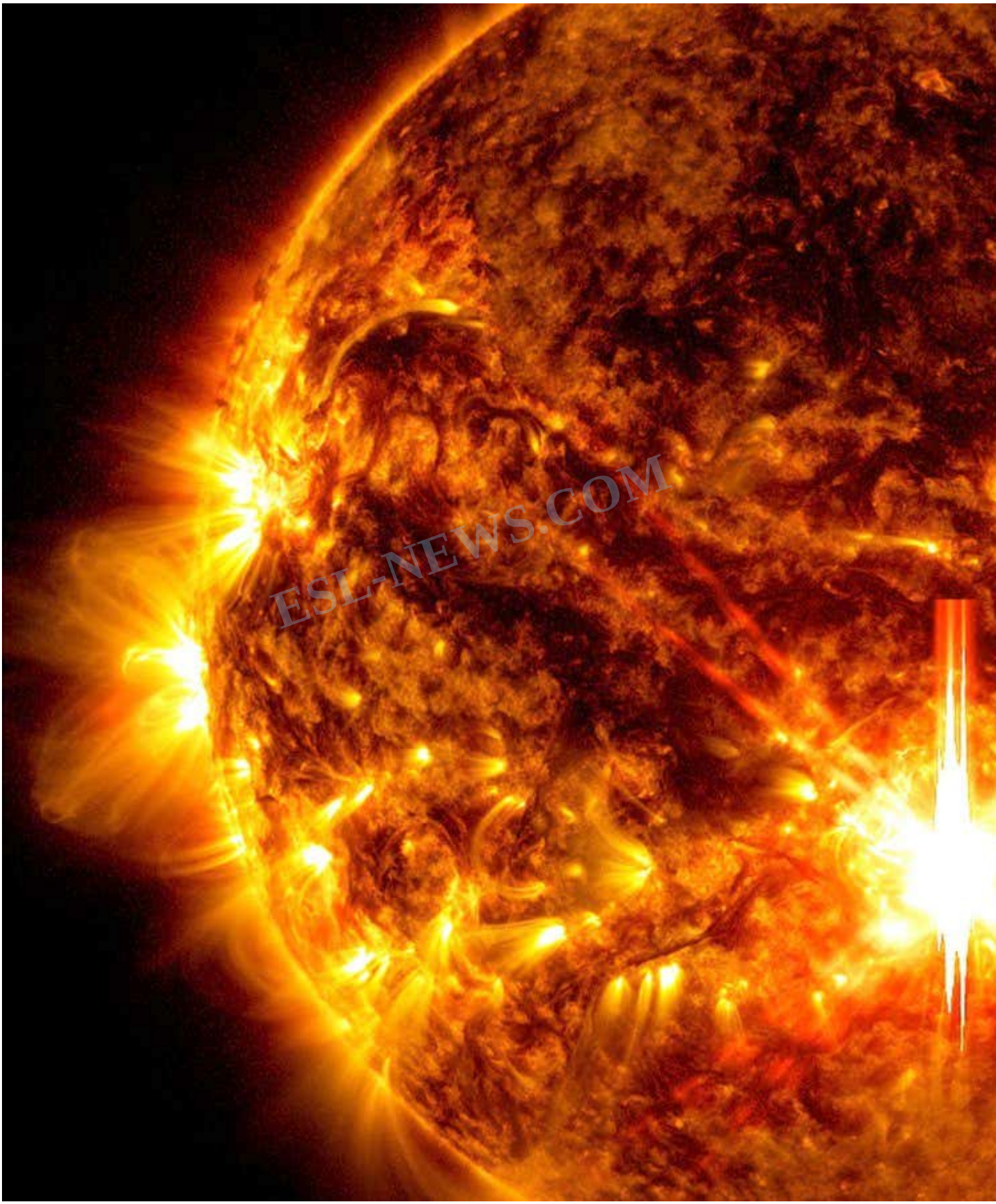
Surprising Frequency of Massive Solar Flares Revealed

Description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The sun can have very strong bursts of radiation called "superflares" that happen about once every century. These superflares might come with particle storms that can harm electronics on Earth. The last big solar storm was 165 years ago, and we might be due for another one soon. But we aren't sure if the sun acts like other stars that have these superflares.

Scientists started keeping track of the sun's activity in the middle of the 20th century, but we know that in 1859, there was a huge solar flare followed by a coronal mass ejection. This caused a geomagnetic storm on Earth known as the Carrington event. If this happened today, it could cause big problems with communication systems and power.

Recent research suggests that sun-like stars have superflares more often than we thought. These superflares are much bigger than what our sun typically produces. Scientists are still trying to understand why some stars have these superflares and if the sun could have them too.

Vocabulary List:

1. **Superflares** /ˈsuː.pɚ.flɛrz/ (noun): Very strong bursts of radiation emitted by the sun or other stars.
2. **Radiation** /ˌreɪ.diˈeɪ.ʃən/ (noun): Energy emitted in the form of waves or particles.
3. **Coronal** /kəˈroʊ.nəl/ (adjective): Relating to the outermost part of the sun’s atmosphere.
4. **Ejection** /iˈdʒɛkʃən/ (noun): The act of throwing out or forcing out.
5. **Geomagnetic** /ˌdʒi.oʊ.məgˈnɛtɪk/ (adjective): Relating to the Earth’s magnetic field.
6. **Communication** /kəˌmjunɪˈkeɪʃən/ (noun): The act of exchanging information or news.

Comprehension Questions

Multiple Choice

1. How often can the sun have very strong bursts of radiation called "superflares"?

   Option: Once every century
   Option: Once every decade
   Option: Once every month
   Option: Once every year

2. What event in 1859 caused a geomagnetic storm on Earth?

   Option: Huge solar flare followed by a coronal mass ejection
   Option: Meteor shower

Option: Tornado outbreak
Option: Earthquake

3. What do scientists believe might happen soon regarding solar storms?

Option: Another big solar storm might occur
Option: No more solar storms will occur
Option: Solar storms will decrease in intensity
Option: Solar storms will increase in frequency

4. What are scientists still trying to understand regarding superflares?

Option: Why some stars have them
Option: Why the sun produces them regularly
Option: How to prevent them
Option: Where they originate from

5. What event caused big problems with communication systems and power in 1859?

Option: Carrington event
Option: Aurora Borealis
Option: Magnetic storm
Option: Solar eclipse

6. According to recent research, how do superflares of sun-like stars compare to those of our sun?

Option: Much bigger
Option: Similar in size
Option: Small
Option: Happens less frequently

True-False

7. Superflares from the sun happen more often than we thought.

8. The last big solar storm was 100 years ago.

9. Communication systems and power were not affected by the Carrington event in 1859.

10. Scientists are certain that the sun acts differently from other stars with superflares.

11. Solar storms are harmless to electronics on Earth.

12. Sun-like stars do not have superflares.

Gap-Fill

13. The last big solar storm was 165 years ago, and we might be due for another one soon. Scientists started keeping track of the sun's activity in the middle of the 20th century. In 1859, there was a huge solar flare followed by a coronal mass ejection known as the _____ event.

14. Recent research suggests that sun-like stars have superflares more often than we thought. These superflares are much bigger than what our sun typically produces. Scientists are still trying to understand why some stars have these superflares and if the sun could have them _____.

15. Scientists are still trying to understand why some stars have superflares and if the sun could have them _____.

16. A huge solar flare followed by a coronal mass ejection in 1859 caused a geomagnetic storm on Earth known as the _____ event.

17. The sun can have very strong bursts of radiation called "superflares" that happen about once every _____.

18. Scientists started keeping track of the sun's activity in the middle of the _____ century.

Answer

Multiple Choice: 1. Once every century 2. Huge solar flare followed by a coronal mass ejection 3. Another big solar storm might occur 4. Why some stars have them 5. Carrington event 6. Much bigger
True-False: 7. False 8. False 9. False 10. False 11. False 12. False
Gap-Fill: 13. Carrington 14. too 17. century 18. 20th

Vocabulary quizzes

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

1. What is a result of great effort or success?

   Option: Puzzles
   Option: Intelligence
   Option: Achievement
   Option: Hackers

2. What happens when security has been breached?

   Option: Theft
   Option: Compromised
   Option: Sanctions
   Option: Infiltrated

3. What are intense bursts of energy from stars called?

   Option: Superflares
   Option: Radiation
   Option: Ejection
   Option: Coronal

4. What are substances added to improve or preserve something?

   Option: Toxins
   Option: Additives
   Option: Detect
   Option: Artificial

5. What type of effects can be caused by dangerous substances?

   Option: Approval
   Option: Compliance
   Option: Dangers
   Option: Features

6. Where can different software applications operate?

   Option: Intelligence
   Option: Platforms
   Option: Skills
   Option: Progress

7. What is the action of obtaining something through force or threats?

Option: Extort
Option: Theft
Option: Sanctions
Option: Infiltrated

8. What are poisonous substances produced by living cells or organisms?

Option: Toxins
Option: Detect
Option: Additives
Option: Artificial

9. What is a fact or statement that has been validated as true?

Option: Achievement
Option: Puzzles
Option: Skills
Option: Confirmed

10. What term relates to the Earth's magnetic field?

Option: Communication
Option: Geomagnetic
Option: Superflares
Option: Radiation

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

11. Hackers often use their _____ to gain unauthorized access to systems.

12. Continuous learning and improvement lead to personal _____.

13. The latest model of the smartphone has advanced _____ for better usability.

14. Businesses need to adhere to regulations for legal _____.

15. The proposal requires the manager's _____ before implementation.

16. Using advanced sensors helps in early _____ of potential issues.

17. Effective _____ is essential for smooth teamwork and collaboration.

18. Regular practice enhances one's _____ in various areas.

19. Countries may impose _____ as penalties for certain actions.

20. Burglary involves the illegal _____ of property.

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

21. The spies successfully the enemy headquarters without being detected.
22. The synthetic diamonds are considered to be of origin.
23. The new car model boasts advanced safety for driver assistance.
24. Exposure to excessive solar can be harmful to living organisms.
25. The security system enables early of unauthorized access attempts.
26. are skilled individuals who use technology to gain unauthorized access.
27. Warning signs indicate potential on the hiking trail.
28. Continuous practice helps in honing one's professional .
29. Regular assessments track the project team's towards the set goals.
30. Solar ejections can disrupt satellite communications on Earth.

Answer

Multiple Choice: 1. Achievement 2. Compromised 3. Superflares 4. Additives 5. Harmful 6. Platforms 7. Extort 8. Toxins 9. Confirmed 10. Geomagnetic
Gap-Fill: 11. Intelligence 12. Progress 13. Features 14. Compliance 15. Approval 16. Detection 17. Communication 18. Skills 19. Sanctions 20. Theft
Matching sentence: 1. Infiltrated 2. Artificial 3. Features 4. Radiation 5. Detection 6. Hackers 7. Dangers 8. Skills 9. Progress 10. Coronal

CATEGORY

1. Sci/Tech - LEVEL2

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Author
aimeeyoung99