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# Shocking Find: Milky Way Older Than Believed!

## Description

A group of very old stars have been seen near our sun, showing that our galaxy is much older than we thought. Most of the 100 billion stars in the Milky Way spin around a supermassive black hole at the center. Scientists believed the galaxy formed 8 to 10 billion years ago, but new information from the European Space Agency's Gaia spacecraft suggests it could be over 13 billion years old.

Researchers from Germany's Leibniz Institute for Astrophysics Potsdam made this discovery. They found that the Milky Way likely formed 4-5 billion years earlier than previously believed.

Machine learning helped scientists study 800,000 stars near us, revealing surprising details about their metal content. Some of the oldest stars have twice as much metal as the sun.

This discovery changes how we understand our galaxy's history. It shows that our galaxy had many stars forming early on, leading to quick metal enrichment in the inner regions and the creation of the disc.

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## Vocabulary List:

1. **Galaxy** /'gæl.ək.si/ (noun): A system of stars gas and dust held together by gravity.
2. **Supermassive** /,su:.pər'mæs.ɪv/ (adjective): Referring to an exceptionally large mass typically in the context of black holes.
3. **Enrichment** /ɪn'ri:tʃ.mənt/ (noun): The process of improving or enhancing the quality or value of something.
4. **Discovery** /dɪs'kʌv.ər.i/ (noun): The act of finding or learning something for the first time.
5. **Researchers** /rɪ'sɜ:.tʃərz/ (noun): Individuals who investigate or study a particular subject in detail.
6. **Metal** /'met.əl/ (noun): A typically solid substance that is a good conductor of heat and electricity.

## Comprehension Questions

### Multiple Choice

1. Approximately how many stars are there in the Milky Way?

Option: 50 billion

Option: 75 billion

Option: 100 billion



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Option: 150 billion

2. What do most stars in the Milky Way orbit around?

Option: Neutron star

Option: White dwarf

Option: Supermassive black hole

Option: Red giant

3. What agency's spacecraft provided new information about the age of the Milky Way?

Option: NASA

Option: Roscosmos

Option: European Space Agency

Option: SpaceX

4. How old did scientists previously believe the Milky Way to be?

Option: 4-5 billion years

Option: 8-10 billion years

Option: 13-15 billion years

Option: 20-25 billion years

5. What technology assisted scientists in studying 800,000 stars near us?

Option: Telescopes

Option: Microscopes

Option: Machine learning

Option: Satellites

6. How does the discovery about metal content of stars near us impact our understanding of the galaxy?

Option: Decreases metal content in the disc

Option: Reveals stars with no metal

Option: Shows stars with more metal than the sun

Option: Leads to quick metal enrichment in outer regions

## Answer

**Multiple Choice:** 1. 100 billion 2. Supermassive black hole 3. European Space Agency 4. 8-10 billion years  
5. Machine learning 6. Shows stars with more metal than the sun

## Vocabulary quizzes



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

1. What is a vast system of stars that include the Earth and the Sun?  
Option: A) Universe  
Option: B) Galaxy  
Option: C) Nebula  
Option: D) Constellation
2. What term is used to describe extremely large black holes with masses millions to billions of times that of the Sun?  
Option: A) Miniature  
Option: B) Supermassive  
Option: C) Moderate  
Option: D) Average
3. What is the process of adding more of a nutrient or substance to something?  
Option: A) Depletion  
Option: B) Reduction  
Option: C) Enrichment  
Option: D) Deprivation
4. Which substance is typically hard shiny malleable fusible and ductile with good electrical and thermal conductivity?  
Option: A) Metal  
Option: B) Plastic  
Option: C) Wood  
Option: D) Paper
5. What term refers to new methods or ideas to make something better or more efficient?  
Option: A) Traditions  
Option: B) Innovations  
Option: C) Conventions  
Option: D) Rituals
6. Which term describes the power or ability to do something?  
Option: A) Restrictions  
Option: B) Impediments  
Option: C) Potentials  
Option: D) Capabilities
7. What term describes the quality of being suited to serve a purpose well?  
Option: A) Inefficiency



- Option: B) Dysfunctionality
- Option: C) Functionality
- Option: D) Ineffectiveness

8. What term is used to describe something innovative or pioneering?

- Option: A) Commonplace
- Option: B) Traditional
- Option: C) Groundbreaking
- Option: D) Conventional

9. What term describes a process that is smooth and continuous with no apparent gaps or interruptions?

- Option: A) Bumpy
- Option: B) Disjointed
- Option: C) Seamless
- Option: D) Disconnected

10. What term refers to the act of supervising and checking continuously over time?

- Option: A) Ignoring
- Option: B) Overlooking
- Option: C) Monitoring
- Option: D) Neglecting

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

- 11. The explorers made a \_\_\_\_\_ that led to the finding of an ancient civilization.
- 12. The hikers were well \_\_\_\_\_ with all the necessary gear for their journey.
- 13. The company achieved \_\_\_\_\_ success with its latest product launch.
- 14. The software update \_\_\_\_\_ the performance of the application.
- 15. There was much \_\_\_\_\_ about the outcome of the election.
- 16. The fans waited in \_\_\_\_\_ for the release of the new album.
- 17. The new version of the phone comes with several \_\_\_\_\_ to its camera features.
- 18. Physical fitness is at the \_\_\_\_\_ of a healthy lifestyle.
- 19. The construction of the bridge required a large amount of \_\_\_\_\_.



20. The entrepreneur explored various \_\_\_\_\_ to expand her business globally.

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

21. They conducted experiments to test their hypotheses and gather data for analysis.
22. Efforts to protect the environment are essential for ensuring the future of our planet.
23. The archaeological team unearthed ancient artifacts that shed light on early civilizations.
24. The tailor offered personalized options to ensure each customer's satisfaction.
25. The car manufacturer built a strong frame to serve as the foundation for the vehicle.
26. The coded messages were difficult to decipher without the key.
27. The air was filled with excitement as the audience waited for the performer to take the stage.
28. Technology companies are constantly striving to introduce new inventions to stay ahead in the market.
29. Analysts conducted side-by-side evaluations of the competing products to determine their strengths and weaknesses.
30. The aim is to combine different systems seamlessly to create a unified solution.

## Answer

**Multiple Choice:** 1. B) Galaxy 2. B) Supermassive 3. C) Enrichment 4. A) Metal 5. B) Innovations 6. D) Capabilities 7. C) Functionality 8. C) Groundbreaking 9. C) Seamless 10. C) Monitoring

**Gap-Fill:** 11. discovery 12. equipped 13. unprecedented 14. enhanced 15. speculation 16. anticipation 17. enhancements 18. core 19. metal 20. avenues

**Matching sentence:** 1. researchers 2. sustaining 3. discovery 4. customization 5. chassis 6. cryptic 7. anticipation 8. innovations 9. comparisons 10. integrate

## CATEGORY

1. Sci/Tech - LEVEL2

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