



## Racing through our galaxy at incredible speed

### Description

A **runaway star** named **J1249+36** is causing excitement as it zooms through space at incredible speeds, breaking free from our galaxy's **gravitational pull**. Scientists are puzzled by what could have made this star move three times faster than the sun and 1,500 times faster than the speed of sound.

One theory suggests that **J1249+36** was once part of a **binary system** with a white dwarf. When the white dwarf exploded, it released the star with a powerful kick. Another idea involves a close encounter with two black holes in a **globular cluster**, which ejected the star at high speed.

Researchers are now studying the star's composition to understand its origins and whether it was affected by a white dwarf explosion. Interestingly, this fast star belongs to a class of ancient stars called **subdwarfs** and was discovered by volunteer scientists searching for evidence of the mysterious "Planet 9." Even though hypervelocity stars like **J1249+36** are relatively common in our galaxy, they continue to fascinate scientists.

### Vocabulary List

1. **Runaway star** /rʌnəweɪ stɑːr/ (noun): A star moving rapidly through space, escaping the gravitational pull of its galaxy.
2. **Gravitational pull** /ˌɡrævɪˈteɪʃənəl pʊl/ (noun): The force that attracts objects towards the center of a massive body, like a star or planet.
3. **Binary system** /ˈbaɪnəri ˈsɪstəm/ (noun): A system of two stars orbiting around a common center of mass.
4. **Globular cluster** /ˈɡləbjʊlər ˈklʌstər/ (noun): A spherical collection of stars that orbits a galactic core.
5. **Subdwarfs** /ˈsʌbdwɔːrfs/ (noun): A class of faint stars with low metal content, older than the sun.

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5. **Subdwarfs** /ˈsʌbdwɔːrfs/ (noun): A class of faint stars with low metal content older than the sun.
6. **Hypervelocity** /ˌhaɪpərvəˈlɒsɪti/ (adjective): Describing speeds that are significantly above the average velocities of objects in space.



## Vocabulary quizzes

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

1. What term describes the approach a leader takes to guide and motivate their team?  
Option: Commitment  
Option: Financial sustainability  
Option: Player-focused  
Option: Leadership style
2. What aspect focuses on the ability of an organization to maintain operations and meet its financial obligations over the long term?  
Option: Job instability  
Option: Runaway star  
Option: Financial sustainability  
Option: Binary system
3. Which term refers to the variety and differences in a group of people such as in ethnicity gender or age?  
Option: Binary system  
Option: Globular cluster  
Option: Diversity  
Option: Subdwarfs
4. Which term describes behavior intended to cause physical harm or damage?  
Option: Hypervelocity  
Option: Violence  
Option: Intriguing  
Option: Adult-oriented
5. What term denotes the action or process of becoming larger or more extensive?  
Option: Advancement  
Option: Expansion  
Option: Iconic  
Option: Commissioned
6. What term describes a cooperative relationship between two parties for a specific purpose?  
Option: Bespoke  
Option: Exhilarating  
Option: Partnership  
Option: Masterpiece



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7. What term is used to describe an outstanding work of art or craft?
- Option: Dynamics
  - Option: Atmosphere
  - Option: Discovery
  - Option: Masterpiece
8. Which term describes a state of conflict disorder or confusion?
- Option: Observations
  - Option: Intricate
  - Option: Turbulent
  - Option: Advancement
9. What term refers to the lack of security and predictability in one's employment?
- Option: Gravitational pull
  - Option: Binary system
  - Option: Job instability
  - Option: Globular cluster
10. Which term denotes the process of moving forward making progress or improvement?
- Option: Subdwarfs
  - Option: Hypervelocity
  - Option: Violence
  - Option: Advancement

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

11. \_\_\_\_\_ is the dedication and loyalty to a cause or organization.
12. In a successful team the approach should be \_\_\_\_\_ to ensure the well-being and development of team members.
13. The \_\_\_\_\_ of a massive star can affect the motion of other nearby celestial bodies.
14. A \_\_\_\_\_ consists of two objects orbiting around a common center of mass.
15. Astronomical phenomena like \_\_\_\_\_ stars can travel at extreme speeds through space.



16. The tailor created a \_\_\_\_\_ suit tailored specifically to the client's measurements.
17. The Eiffel Tower is an \_\_\_\_\_ symbol of France and a popular tourist attraction.
18. The artist was \_\_\_\_\_ to create a painting for the new art gallery.
19. The scientist made a groundbreaking \_\_\_\_\_ that revolutionized the field of physics.
20. The astronomer made detailed \_\_\_\_\_ of the planetary movements in the night sky.

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

21. The _____ was expelled from its original stellar group and now travels through space at high speed.
22. A _____ is a densely packed group of stars bound together by gravity.
23. _____ are stars that are smaller and less luminous than main sequence stars.
24. The artist created an _____ design with elaborate details and patterns.
25. The _____ of the event was festive and filled with excitement.
26. The singer's debut album became an _____ representation of the 90s music scene.
27. The roller coaster ride provided an experience with twists and turns.
28. The team studied the group's _____ to understand the interactions among members.
29. The political situation in the country was _____ with protests and unrest.
30. The company invested in technology for the _____ of its production processes.

## Answer

**Multiple Choice:** 1. Leadership style 2. Financial sustainability 3. Diversity 4. Violence 5. Expansion  
6. Partnership 7. Masterpiece 8. Turbulent 9. Job instability 10. Advancement

**Gap-Fill:** 11. Commitment 12. Player-focused 13. Gravitational pull 14. Binary system 15. Hypervelocity  
16. Bespoke 17. Iconic 18. Commissioned 19. Discovery 20. Observations

**Matching sentence:** 1. Runaway star 2. Globular cluster 3. Subdwarfs 4. Intricate 5. Atmosphere 6. Iconic  
7. Exhilarating 8. Dynamics 9. Turbulent 10. Advancement



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## CATEGORY

1. Sci/Tech - LEVEL3

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