

## Astronomers discover 'fastest' star in known universe

© 10 Jul 2022 Last updated at 13:30

 [View Comments \(8\)](#)



ESO, ESA/HUBBLE, M. KORNMESSE

**Astronomers have discovered one of the fastest stars in the known universe which orbits a black hole in record time.**

The star - called S4716 - orbits close to the Sagittarius A black hole at the centre of our universe, [the Milky Way](#).

Researchers have found that the star orbits the black hole, which measures 23.5 million kilometres across, in just four years - which is the shortest orbital period of any star.

This means that the star is traveling at blisteringly fast speeds of around 18 million mph (29 million kph), or nearly 5,000 miles every second.

## **More on stars**

**Study finds stars are forming quicker than previously thought**

**When is the best time to watch the stars?**

**What is Astronomy?**



NASA/ESA

The constellation of Sagittarius

The S4716 was discovered by researchers at the University of Cologne and Masaryk University.

A total of five telescopes were needed to observe the star, with four of these five being combined into one large telescope to allow even more accurate and detailed observations.

The telescopes included NIR2 and OSIRIS in Hawaii, and the **European Southern Observatory's** SINFONI, NACO, and GRAVITY telescopes.

## **What is a black hole?**

**A black hole is a dying star that has collapsed inward under the pressure of its own weight.**

After observing S4716 for almost 20 years, the scientists established the star moves at a speed of 8,000 kilometres per second.

"For a star to be in a stable orbit so close and fast in the vicinity of a supermassive black hole was completely unexpected and marks the limit that can be observed with traditional telescopes," said Dr Florian Peissker, lead author of the new study.

They found that the S4716 comes as close as 100 astronomical units (AU) to the black hole.

One AU is about 149,597,870 kilometres which is considered a small distance in astronomical standards.

The S4716 is part of a densely packed group of stars called the S-star cluster or Sagittarius A\* cluster which contains around 100 fast-moving stars.

---

***MORE LIKE THIS***

---



Your Comments

## Join the conversation

These comments are now closed.

8 comments

S

**scarlett**

19:51 10 Jul

It's really really really pretty :)

0  

F

**Fidget-Lover 123**

19:19 10 Jul

Oh wow!

✨ i stayed up for 26 hours ✨

0  

C

**coolpanda12**

17:17 10 Jul

Whoa!!!! Thats pretty fast for a star orbitting a dying star

0  

D

**DuggeeRules**

17:33 10 Jul

to coolpanda12 "Whoa!!!! Th..."

Yes

0  

D

**DuggeeRules**

17:12 10 Jul

True

0  

S

**scarlett**

19:52 10 Jul

to DuggeeRules "**True**"

I agree

0  

D

**DuggeeRules**

17:12 10 Jul

Yep

0  


S

**Starry Knight**

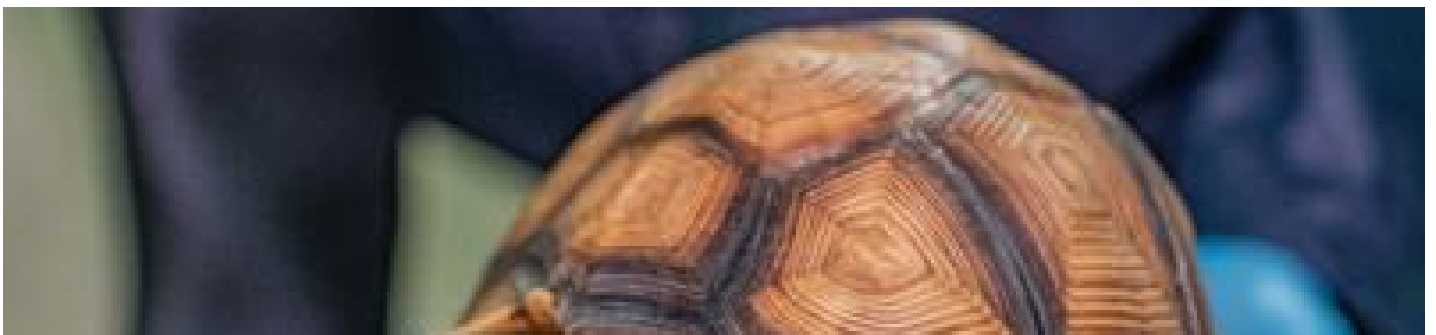
15:16 10 Jul

wow that star is super fast

0  

Back to top 

## TOP STORIES





Show more

Newsround Home

## Explore the BBC

CBBC	CBBC iPlayer
Newsround	Bitesize
Own It	CBeebies
CBBC on TV	CBBC Help

- Terms of Use
- Privacy Policy
- Accessibility Help
- Contact the BBC
- Advertise with us

- About the BBC
- Cookies
- Parental Guidance
- Get Personalised Newsletters
- AdChoices / Do Not Sell My Info

