



**GET SET FOR A GREAT SEASON WITH MARS**

#209 OCTOBER 2022

# Sky at Night

THE UK'S BEST SELLING ASTRONOMY MAGAZINE

## ARTEMIS READY FOR THE MOON

Meet the people behind  
NASA's return to the Moon

**YOUR GUIDE TO THIS  
MONTH'S SOLAR ECLIPSE**

**AUTUMN'S TOP  
TARGETS FOR  
CITY STARGAZERS**

**FÉLICETTE, THE CAT  
THAT FLEW TO SPACE**

**ANCIENT LUNAR HISTORY  
WRITTEN IN SANDSTONE**

**NEW ASTRO IMAGING KIT  
RATED AND REVIEWED**

**Astronomy  
Photographer  
of the Year**  
**SEE ALL THE  
WINNERS  
INSIDE!**



# EXPLAINER

## Félicette, the cat that flew to space

**Stuart Atkinson** tells the story of the only feline to have survived spaceflight



Félicette's flight lasted 13 minutes and travelled to 157km above Earth

The cats underwent 'astronaut training'. To test their reaction to being confined, they were put into small containers for long periods. They were also spun around in a centrifuge, simulating the G-forces of lift-off and re-entry. For the cat astronaut candidates, the phrase 'not enough room to swing a cat' did not apply.

Eventually six cats were chosen to go through to the next stage, including a tuxedo cat known then only as 'C341'.

Laika flew into orbit atop a tall, chunky Sputnik rocket very similar to the Vostok booster that would carry Yuri Gagarin. But with its tail fins and pointed nose, C341's slim Veronique AGI booster looked more like a child's drawing of a rocket. It didn't even use a conventional launch tower. Instead, its weight was supported by a quartet of long fins, like the legs of a Christmas tree stand.

### Launch day

On 18 October 1963, just after 8am local time, the Veronique rocket blasted off from the Interarmy Special Vehicles Test Centre in the middle of the Sahara Desert in Algeria. Cocooned inside her capsule, little C341 experienced 9.5 g, almost double the g-force the Apollo astronauts experienced as they launched to the Moon. After reaching an altitude of 157km, C341 was only 'in space' for around five minutes. Inside her capsule she had no view of the Earth.

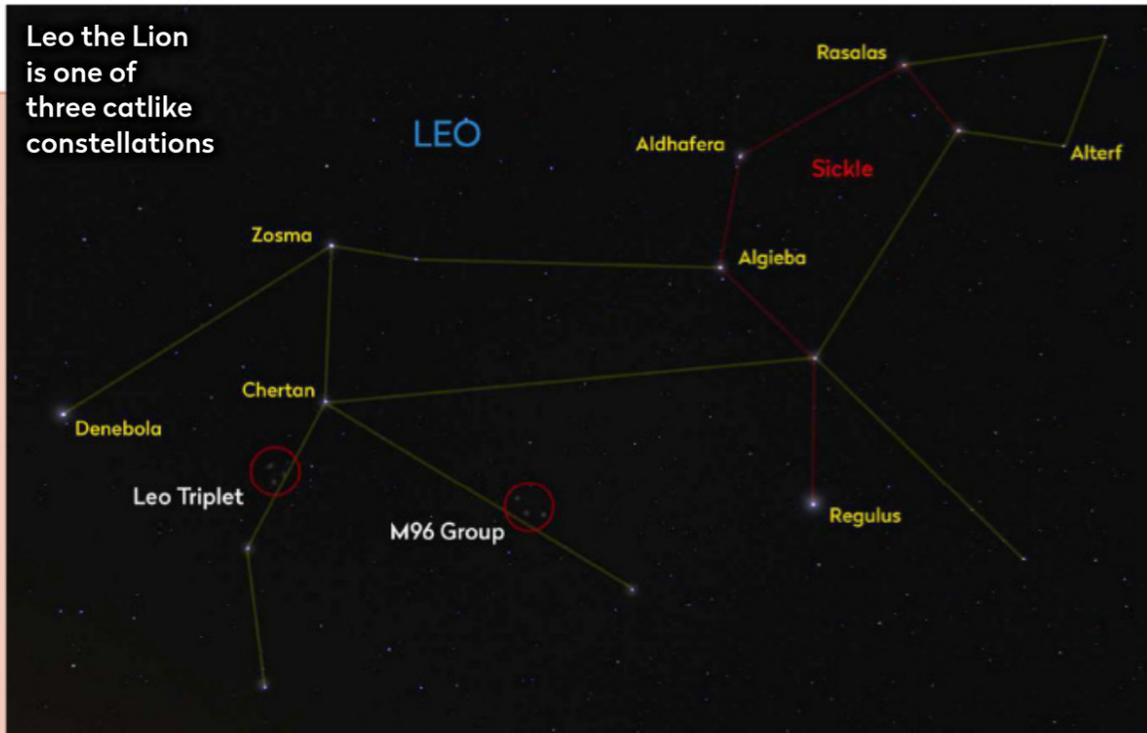
As the rocket began its descent, the capsule separated from the booster. C341 experienced 'only' 7 g as she fell, until her capsule's parachutes opened. Thirteen minutes after lift-off the cone-shaped capsule landed, leaving C341 hanging upside down with her bottom sticking up in the air – a very undignified pose for any cat – until a helicopter arrived and she was retrieved.

The chances are, if you saw a crossword clue 'Animal that flew into space (3)', you'd think of Laika and write, "Dog". And it might be right, but there's another correct answer. This month is the 59th anniversary of a small, black and white cat called Félicette travelling where no feline had gone before – or has gone since. But why is Félicette overlooked when Laika is so loved? Perhaps because her rocket looked like a firework compared to Laika's powerful booster. Or maybe it's because she only flew to the edge of space, on the same

kind of suborbital flight that billionaires now pay a fortune for.

Félicette's story began in 1961 when, following the superpowers' successful animal flights, France decided to stage a series of missions of its own, using cats instead of dogs or monkeys, hoping to collect data that would allow them to launch their own astronauts later.

Fourteen female cats were subsequently acquired by French CERMA space scientists. To prevent the scientists from becoming attached to them, the cats were given numbers instead of names. They were also fitted with electrodes to record their brain activity.



Leo the Lion is one of three catlike constellations

**Leo Minor** Prowling between Leo and Ursa Major, this small, faint, Messier-object-free constellation contains the famous deep-sky oddity Hanny's Voorwerp, a 'quasar ionisation echo' spotted in 2007 by citizen scientist Hanny van Arkel during the very first Galaxy Zoo project.

**Lynx** This starry zig-zag between Ursa Major and Auriga was introduced in the late 17th century by Johannes Hevelius, who thought it was so faint it took the eyesight of a lynx to see it. Five of its stars are known to have exoplanets orbiting them.

**Felis** Created by French astronomer and cat lover Jérôme Lalande in 1799, who felt it was wrong there were no domestic cats represented in the night sky, Felis purred between the constellations of Antlia and Hydra. It was absorbed into its neighbours and no longer exists.

## Feline constellations

Félicette may be the only cat to have flown to space, but there are other felines that feature in the night sky

**Leo** This sprawling zodiacal constellation shines low in the east before dawn this month. It contains the Sickle asterism and hundreds of galaxies, including the famous Leo Triplet.



▲ Félicette is strapped into a launch seat to be loaded into the Veronique rocket



▲ The frame is fed into a windowless compartment the size of a large tin can

With C341 safely back on Earth it was time for France to let the world know about her flight – and finally she had a name too. In the absence of an actual name, the French media nicknamed the space cat Felix, after the naughty black and white cartoon cat from movies and television. But C341 was female, so CERMA took the nickname and changed it to the feminine version: Félicette.

Sadly, like Laika's, Félicette's story did



▲ The French Veronique AGI rocket was much smaller than any from the Apollo era

not have a happy ending. Two months after landing she was euthanised so the scientists could carry out a postmortem to see how her body had been affected by her flight. They later admitted they learned nothing useful from the autopsy. No more cats flew into space, and France never launched its own astronauts.

But although her story is less well-known than Laika's, Félicette hasn't been completely forgotten: in 2019 a lovely



▲ British cat fan Matthew Guy launched a successful Kickstarter campaign to honour Félicette with her own bronze statue

statue of her was unveiled at the International Space University Campus in Strasbourg. This October, perhaps you could take a moment to look up at the night sky and think of her too. 🐾



**Stuart Atkinson** is a lifelong amateur astronomer and author of 11 books, including *Félicette, the Space Cat*, available on Kindle