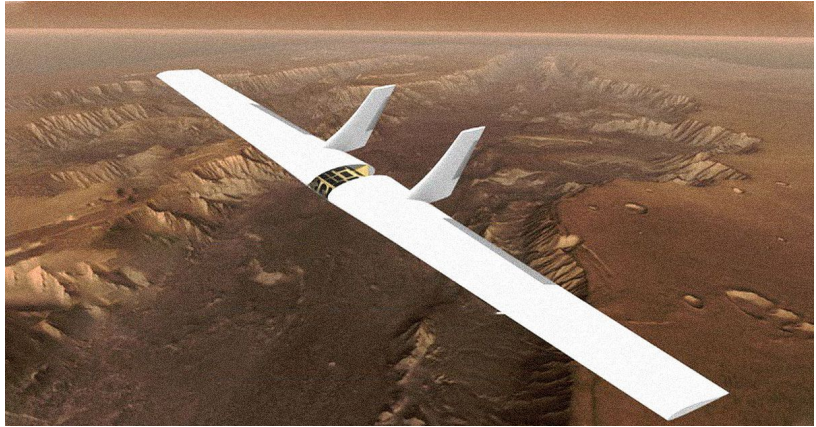


University of Arizona



MARTIAN SAILPLANE

# Researchers Propose An Inflatable Sailplane to Explore Mars

It could accelerate Mars exploration at a fraction of the cost of current missions.

Victor Tangermann | February 7th 2019



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## Inflatable Sailplane

Exploring Mars isn't easy. Satellite imagery lacks detail and rovers move slowly.

But researchers at the University of Arizona say they have a better concept that would cost a fraction of those technologies: an inflatable sailplane that weighs just 11 pounds (5 kg) and

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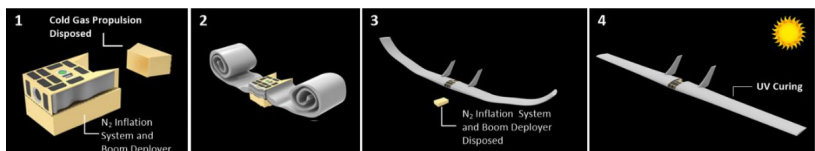




sports a wingspan of 18.7 feet (570 cm), that'll cruise high above the Martian landscape and survey from a bird's eye view.

## Sailing Above

The clever design, available as a [preprint](#) on the *arXiv* database, would travel to the Red Planet on a cubesat. Then a small atmospheric entry spacecraft would bring it down to the Martian surface, where a telescopic boom would hold the sailplane up as it unfurls its rolled-up wing structure by pumping nitrogen gas into special compartments.



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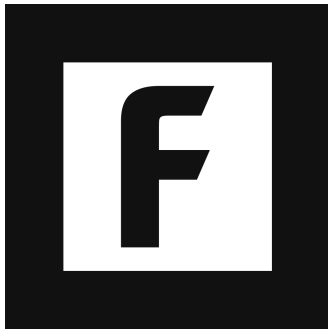
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Most of the wing structure will be covered in a UV-sensitive material that hardens when exposed to sunlight. After about an hour of UV-curing, the sailplane will have enough structural integrity to deploy.

A cold-gas propulsion system will allow it to take to the skies at an altitude of 5,900 feet.



## Cost- And Time-Efficient

The sailplane could also assist other missions or even find suitable places for future human habitation on the Red Planet.

“The Mars sailplane concept proposed here provides a whole new avenue for accelerating exploration of the Martian surface at a fraction of the cost of previous Mars airplane concepts,” reads the paper.

**READ MORE:** [Attitude Control of an Inflatable Sailplane for Mars Exploration](#)

[*arXiv*]

***More on Mars exploration: [China Plans to Launch Its First Mars Lander Mission Next Year](#)***

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