

# Science Focus

The enormous  
POP QUIZ OF THE YEAR

The Universe's  
MOST VIOLENT EXPLOSIONS

This year's  
BIGGEST DISCOVERIES



# END OF YEAR Q&A

SPECIAL ISSUE

*Do video games make you smarter? Are we done with NFTs?*

*How do I build a perfect snowman? Is it good for your brain to avoid the news?*

*Where is the contraceptive pill for men? Is the metaverse a fad?*

*Did dinosaurs really roar? Can science improve your Christmas sarnie?*

*Is there a science to making cocktails? Does HRT do more harm than good?*

**PLUS** **DIY CHRISTMAS SCIENCE**  
THRIFTY HOLIDAY IDEAS THAT DON'T COST THE EARTH







## EYE OPENER

### Beat the heat

LANGLEY RESEARCH CENTER, VIRGINIA, USA

This structure might be the key to landing experiments, equipment and possibly even people on Mars. And it's inflatable. But it's not for cushioning the impact of hitting the planet's surface; it's for surviving the heat of atmospheric re-entry.

NASA is developing it as an alternative to the rigid heatshields currently used to protect payloads as they pass through a planet's atmosphere. The bigger the heatshield, the more heat it can absorb as it generates drag to slow the craft for a safer landing. The problem is, a rigid heatshield's dimensions are constrained by the size of the rocket it has to fit inside. An inflatable shield, however, can be stowed for launch, then inflated to a larger size when it's deployed.

This one is six metres wide when inflated, and if all goes well, it'll have undergone its first test (by re-entering Earth's atmosphere from low orbit) by the time you read this.

NASA/GREG SWANSON

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