Think in Cloud

NO DREAM IS TOO HIGH

杨峰

天仪研究院CEO

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DAY DREAM?


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DAY Life!

移动互联网


Riverside Avenue
Town Hall Square
Central Railway Station
City Park
Park Avenue
N

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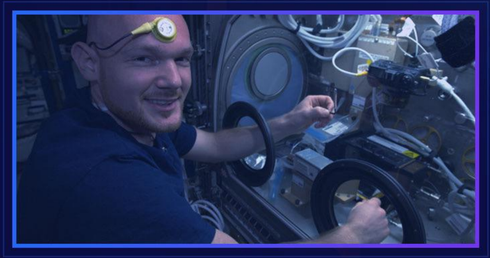
WHAT ARE ASTRONAUTS DOING IN SPACE?

空间科学实验与技术验证



空间实验的意义

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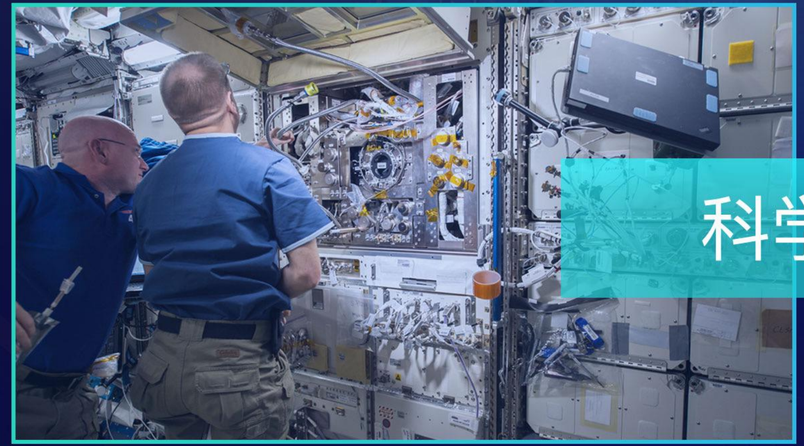
科学 → 发现新的自然规律，开拓新的研究领域

技术 → 探索解决传统问题的新途径，航天领域新技术的试验验证



科学：ISS JAXA ELF

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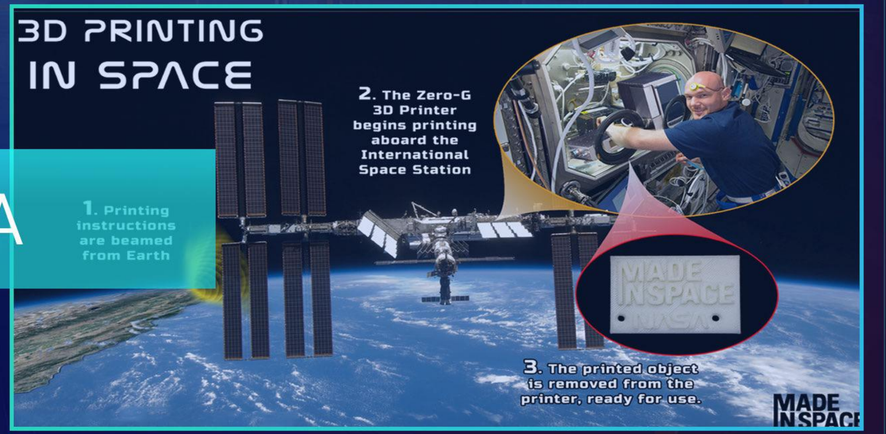
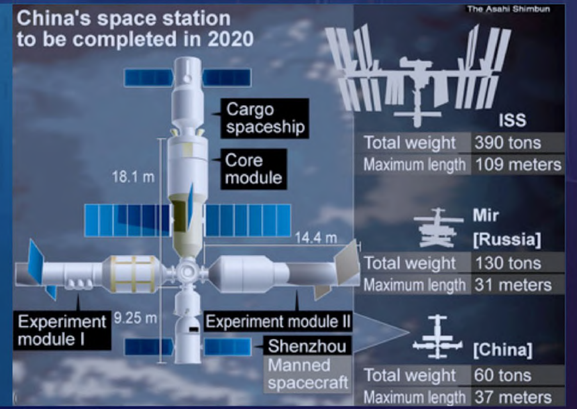
技术：ISS NASA


3D PRINTING
IN SPACE
1. Printing instructions are beamed from Earth
2. The Zero-G 3D Printer begins printing aboard the International Space Station
3. The printed object is removed from the printer, ready for use.
MADE IN SPACE
MADE IN SPACE

ISS 1120 项

CSS 70 项



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中国空间站科学实验

潘建伟院士：量子科学实验卫星

1条路，10年，10个亿

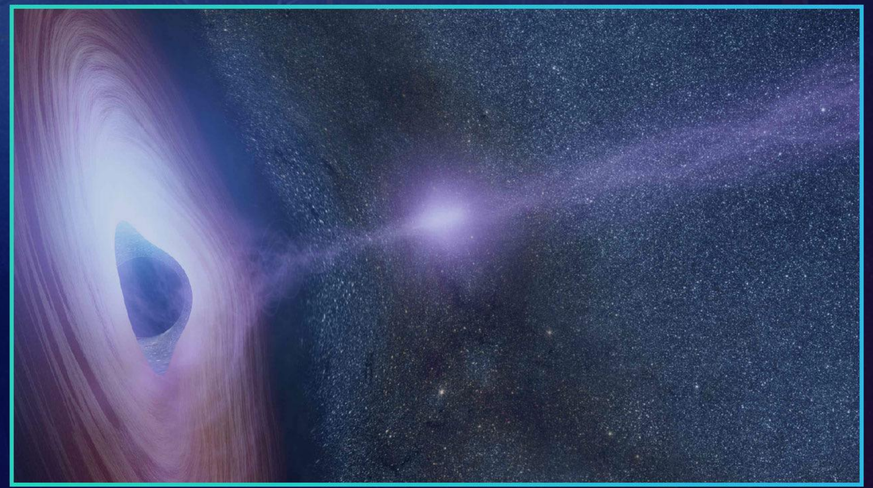
悟空：暗物质科学实验卫星

1条路，30年，10个亿

某教授：某天体物理学研究

1条路，2025年，N个亿

NASA钱德拉卫星评审委员会成员



- **某知名企业三结砷化镓太阳能电池板**

  重量更轻、效率35%、更便宜

- **完全没机会**

  中电科18所、航天811所（垄断） 更重、效率28%、1000美元/瓦

微小卫星科学与技术实验服务

5-10 年起成本N亿

单一机制多单位合作

1年之内成本N百万

机制灵活交钥匙工程

潇湘一号”卫星

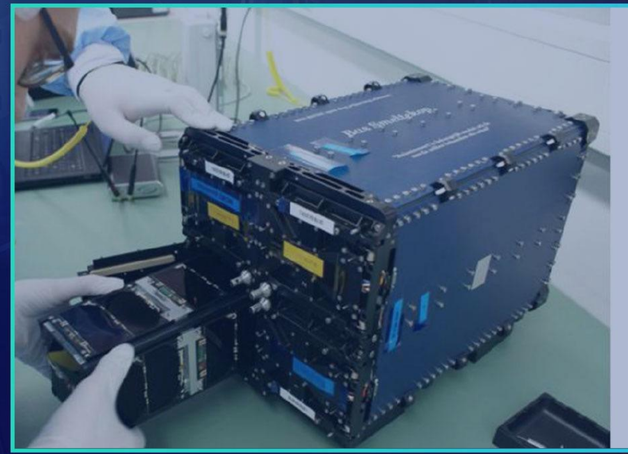
2016年11月10日成功发射

- 高精度光学稳相系统
- 下一代导航信号增强
- 空间软件无线电平台
- 高性能星载计算机

“陈家镛一号”卫星（3U　4kg）

微重力化工实验

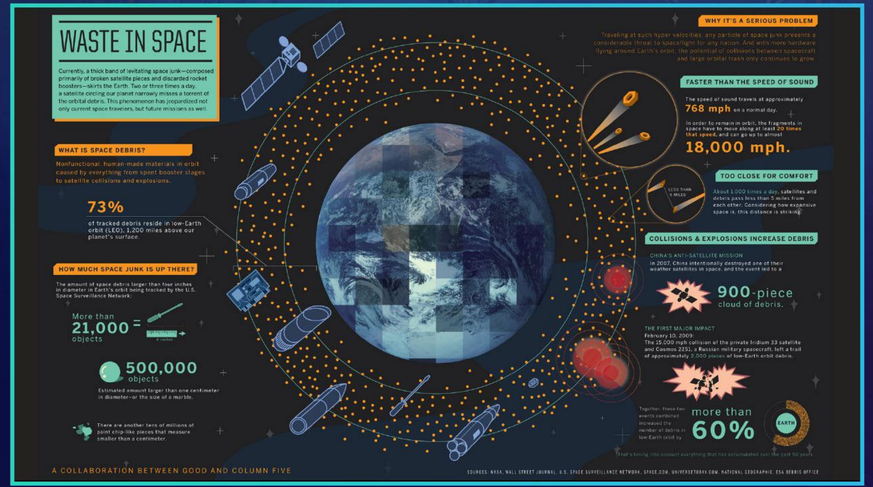
2017年2月15日成功发射

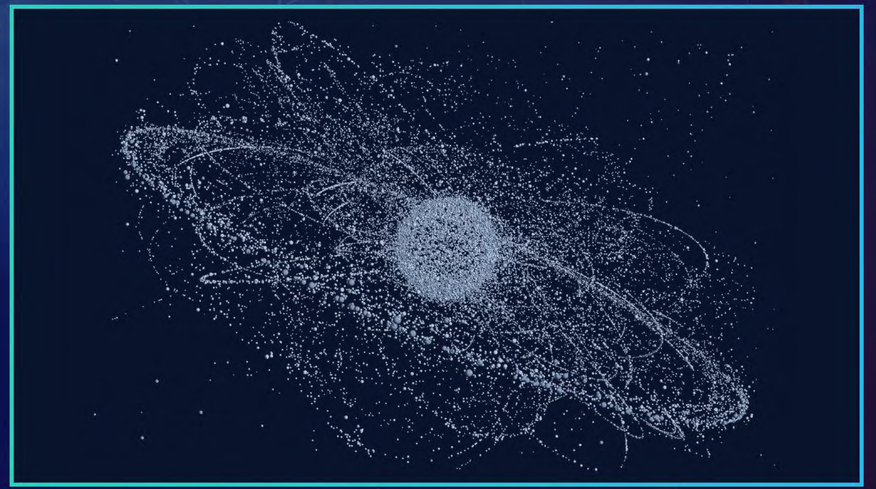


20颗卫星

2017-2018

太空垃圾?


WASTE IN SPACE
Currently, a thick band of revitalting space junk—composed primarily of broken satellite pieces and discarded rocket boosters—skirts the Earth. Two or three times a day, a satellite circling our planet narrowly misses a torrent of the orbital debris. This phenomenon has jeopardized not only current space travelers, but future missions as well.
WHAT IS SPACE DEBRIS?
Nonfunctional, human-made materials in orbit caused by everything from spent booster stages to satellite collisions and explosions.
73%
of tracked debris reside in low-Earth orbit (LEO), 1,200 miles above our planet's surface.
HOW MUCH SPACE JUNK IS UP THERE?
The amount of space debris larger than four inches in diameter in Earth's orbit being tracked by the U.S. Space Surveillance Network.
More than 21,000 = objects
500,000 objects
Estimated amount larger than one centimeter in diameter—or the size of a marble.
There are another tens of millions of paint chip-like pieces that measure smaller than a centimeter.
A COLLABORATION BETWEEN GOOD AND COLUMN FIVE
WHY IT'S A SERIOUS PROBLEM
Traveling at such hyper velocities, any particle of space junk presents a considerable threat to spaceflight for any nation. And with more hardware flying around Earth's orbit, the potential of collisions between spacecraft and the go orbital trash only continues to grow.
FASTER THAN THE SPEED OF SOUND
The speed of sound travels at approximately 768 mph on a normal day.
In order to remain in orbit, the fragments in space have to move along at least 20 times that speed, and can go up to almost
18,000 mph.
LESS THAN 1 MILE
TOO CLOSE FOR COMFORT
About 1,000 times a day, satellites and debris pass less than 5 miles from each other. Considering how expansive space is, this distance is striking.
COLLISIONS & EXPLOSIONS INCREASE DEBRIS
CHINA'S ANTI-SATELLITE MISSION
In 2007, China intentionally destroyed one of their weather satellites in space, and the event led to a
900-piece cloud of debris.
THE FIRST MAJOR IMPACT
February 10, 2009:
The 19,000 mph collision of the private Iridium 33 satellite and Cosmos 2251, a Russian military spacecraft, left a trail of approximately 2,500 pieces of low-Earth orbit debris.
Together, these two events combined increased the number of debris in low-Earth orbit by
more than 60%
That's taking into account everything that has accumulated over the past 50 years.
EARTH
SOURCES: NASA, WALL STREET JOURNAL, U.S. SPACE SURVEILLANCE NETWORK, SPACE.COM, UNIVERSETODAY.COM, NATIONAL GEOGRAPHIC, ESA DEBRIS OFFICE



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UCLOUD + 天仪研究院 =

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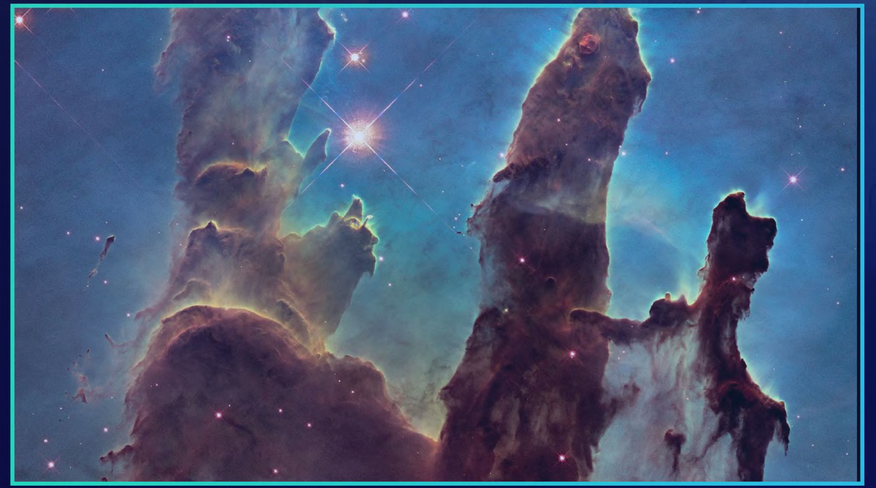

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天仪研究院
商业航天空间应用整合平台
长沙天仪空间科技研究院有限公司专注于研制面向商业市场的微小卫星与载荷，为客户提供低成本、高功能
与快速响应的空间应用解决方案。并提供高可靠的在轨支持和保障。天仪目标成为世界领先的商业航天研发机构，
为人类向无尽宇宙去探索未知的各种奇思妙想提供可能。
MINI HUBBLE 中国第一颗光学天文卫星
1 第一颗完成设备主研制的天文卫星
15 员工投资
18 立项到研制完成
2018 单位开发时
3 单位轨寿命
60 亿元年度营收
≥300主镜
2° × 2° 视场
可以进行超新星观测，
系外行星观测，太空
双大等 系列天文观
测需求。
高精姿稳指技术，
指向精度达到
3-5角秒，
满足顶级天文
观测需求。
16Mbps的数据下行
能力，每年下载超过
70000Gbit的高质量
天文影像。
24*7*365 for everyone.
X射线探测仪
Mini VS Hubble:
口径：1/8
面积：1/100
重量：1/20
成本：1/5000

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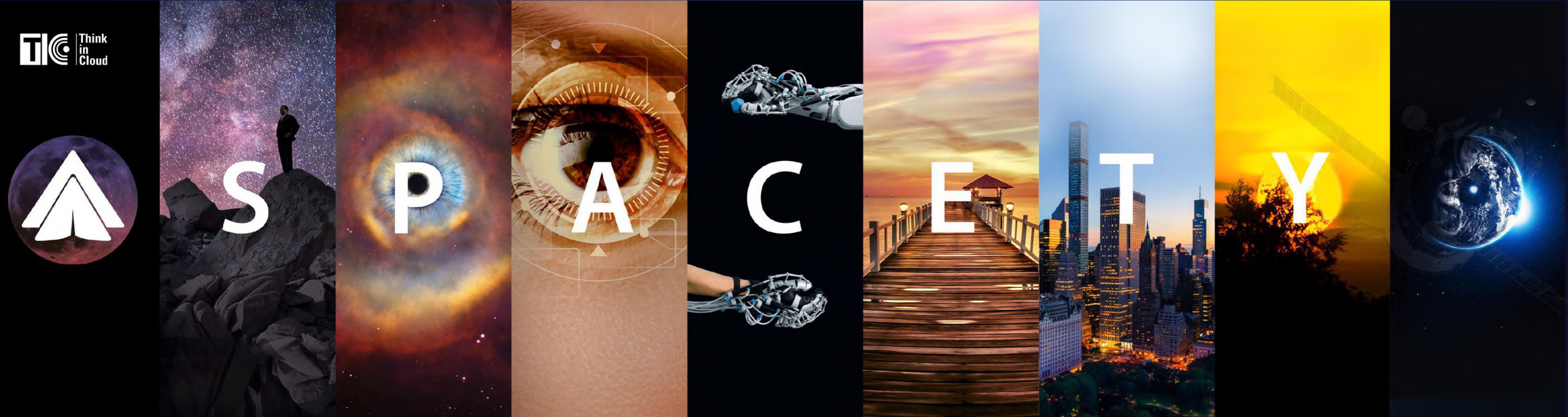

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THANKS!