

NASA's
HUMAN EXPLORATION RESEARCH ANALOG (HERA):
An analog mission for isolation, confinement, and
remote conditions in space exploration scenarios

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4 complete strangers

4 complete strangers

600 square feet

4 complete strangers

600 square feet

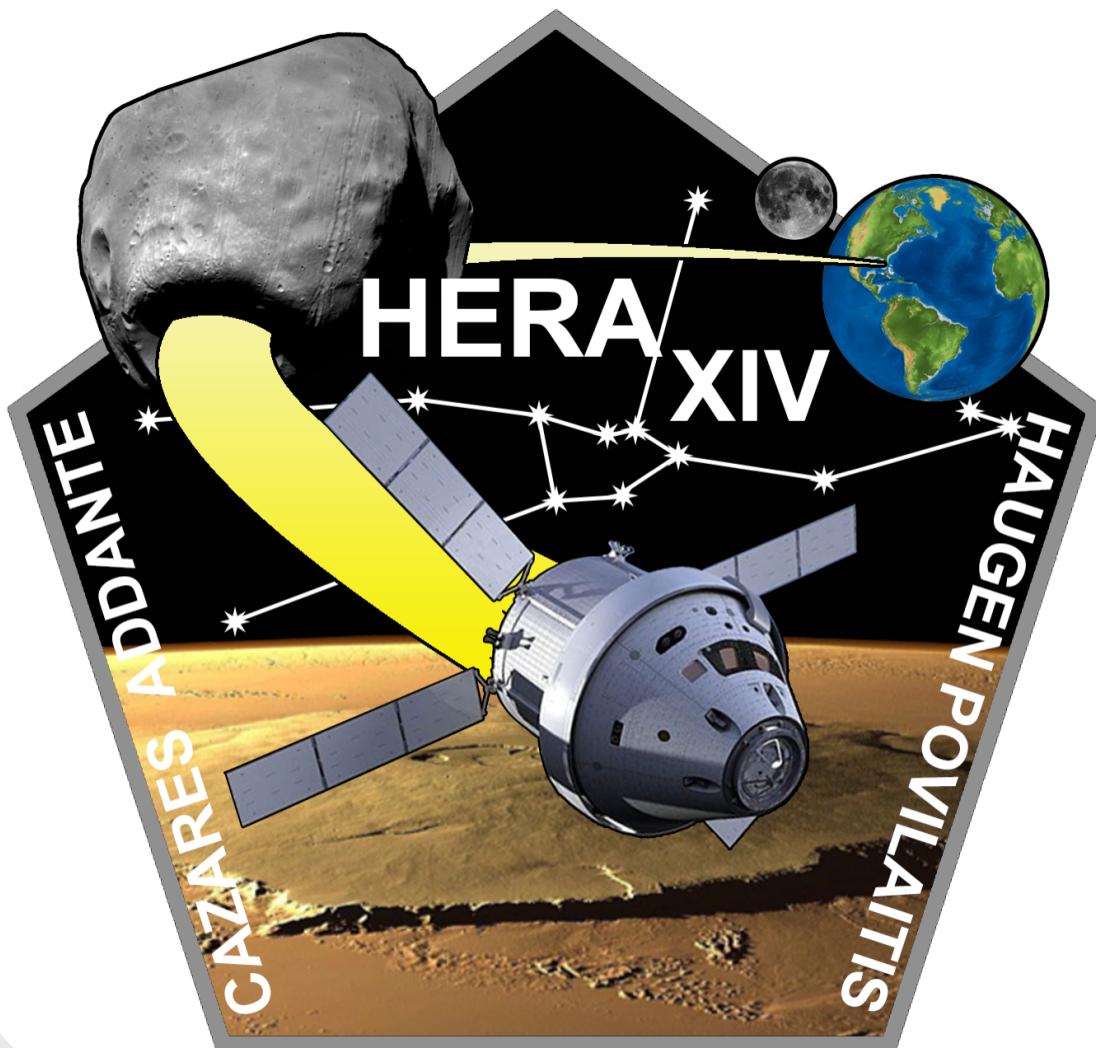
45 days

4 complete strangers

600 square feet

~~23~~ 45 days

1 Category IV hurricane



Agenda

- **Background**
- HERA XIV
 - Selection
 - Training
 - Mission
 - Debrief
- Questions

Background: What is HERA?



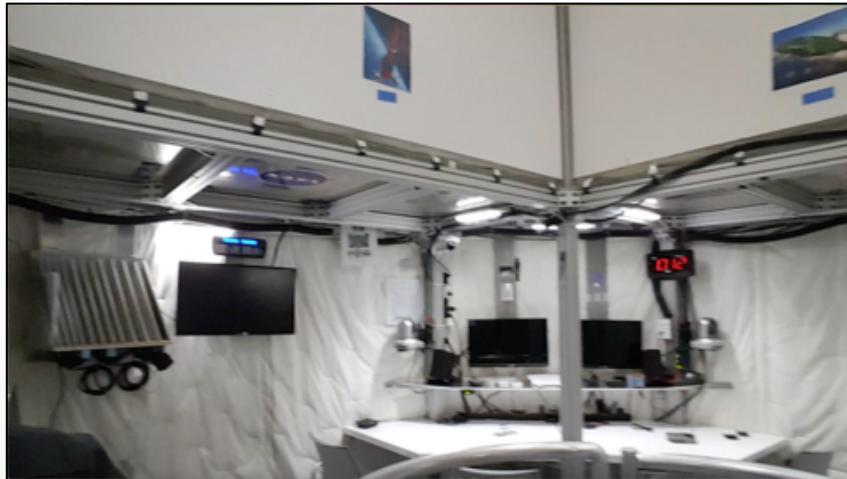
The screenshot shows a web browser window for the NASA website at www.nasa.gov/analogs/hera. The page is titled "Analog Missions" and features the NASA logo. The main content area is titled "HERA Mission Overview". It includes sections for "Location: Johnson Space Center", "Environment: Closed Habitat", and a "Description" of the HERA habitat. The "Description" text states: "HERA is a unique three-story habitat designed to serve as an analog for isolation, confinement, and remote conditions in exploration scenarios." At the bottom, it mentions "HERA XVI is will begin on Feb 3, 2018". The left side of the page has a sidebar with the "Analog Missions" logo and links for "Overview", "Images", "Videos", and "Media Resources".

Background: HERA Habitat – Outside



HERA XIV, 2017

Background: HERA Habitat – Inside



Courtesy of Dr. Tess Caswell, HERA XI, 2016

https://www.youtube.com/watch?v=ei_PHbRAZrg

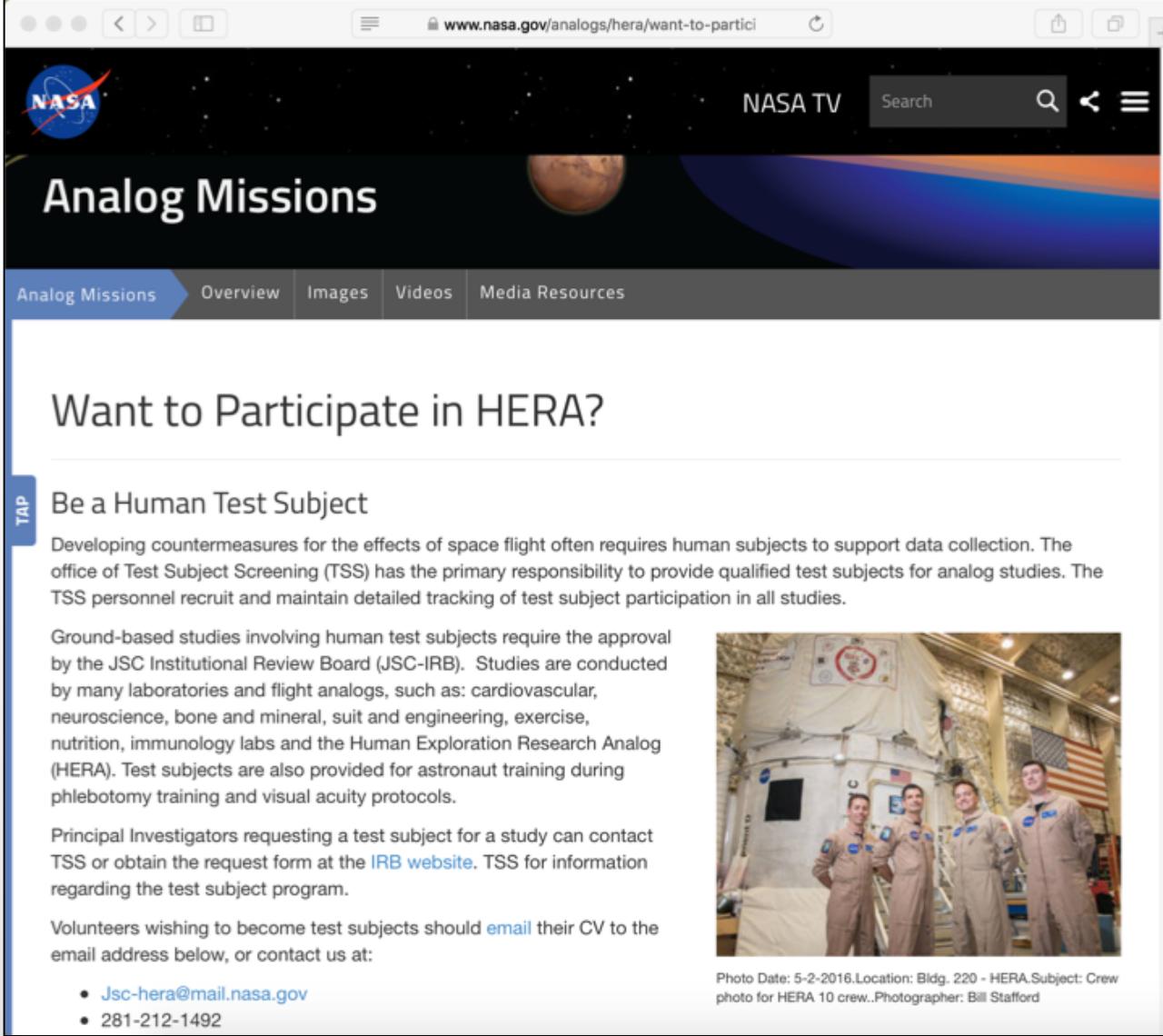
Background: HERA Missions



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HERA XIV: Selection



The screenshot shows a web browser displaying the NASA Analog Missions website. The URL in the address bar is www.nasa.gov/analogs/hera/want-to-partici. The page title is "Analog Missions". The main content area features a large heading "Want to Participate in HERA?". Below this, a section titled "Be a Human Test Subject" is visible. To the right of the text, there is a photograph of four individuals in flight suits standing in a simulated space environment. A caption at the bottom right of the image reads: "Photo Date: 5-2-2016.Location: Bldg. 220 - HERA.Subject: Crew photo for HERA 10 crew..Photographer: Bill Stafford".

Want to Participate in HERA?

Be a Human Test Subject

Developing countermeasures for the effects of space flight often requires human subjects to support data collection. The office of Test Subject Screening (TSS) has the primary responsibility to provide qualified test subjects for analog studies. The TSS personnel recruit and maintain detailed tracking of test subject participation in all studies.

Ground-based studies involving human test subjects require the approval by the JSC Institutional Review Board (JSC-IRB). Studies are conducted by many laboratories and flight analogs, such as: cardiovascular, neuroscience, bone and mineral, suit and engineering, exercise, nutrition, immunology labs and the Human Exploration Research Analog (HERA). Test subjects are also provided for astronaut training during phlebotomy training and visual acuity protocols.

Principal Investigators requesting a test subject for a study can contact TSS or obtain the request form at the [IRB website](#). TSS for information regarding the test subject program.

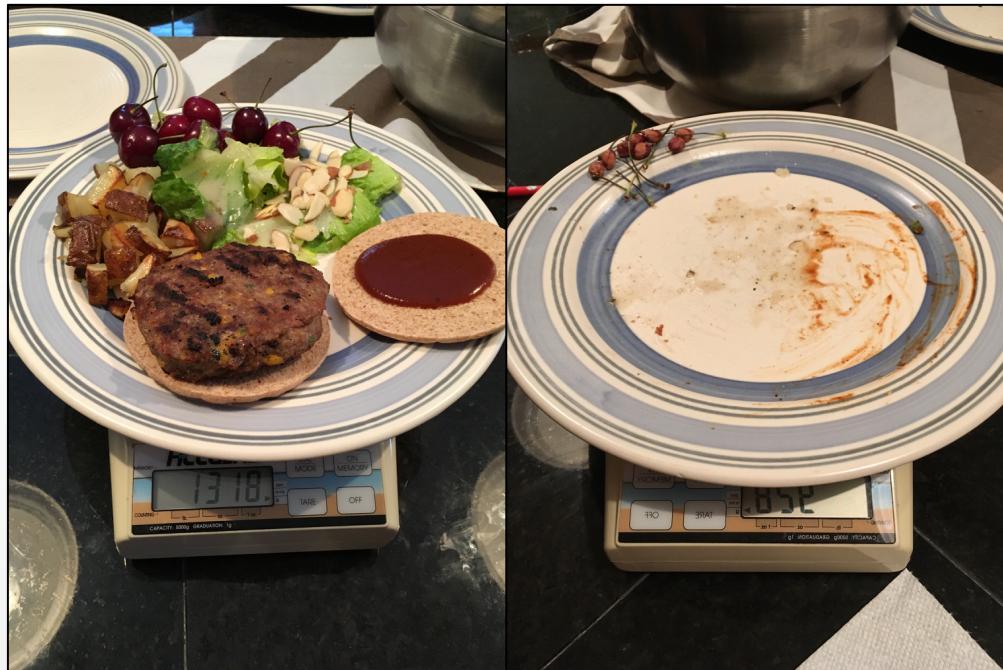
Volunteers wishing to become test subjects should [email](#) their CV to the email address below, or contact us at:

- Jsc-hera@mail.nasa.gov
- 281-212-1492

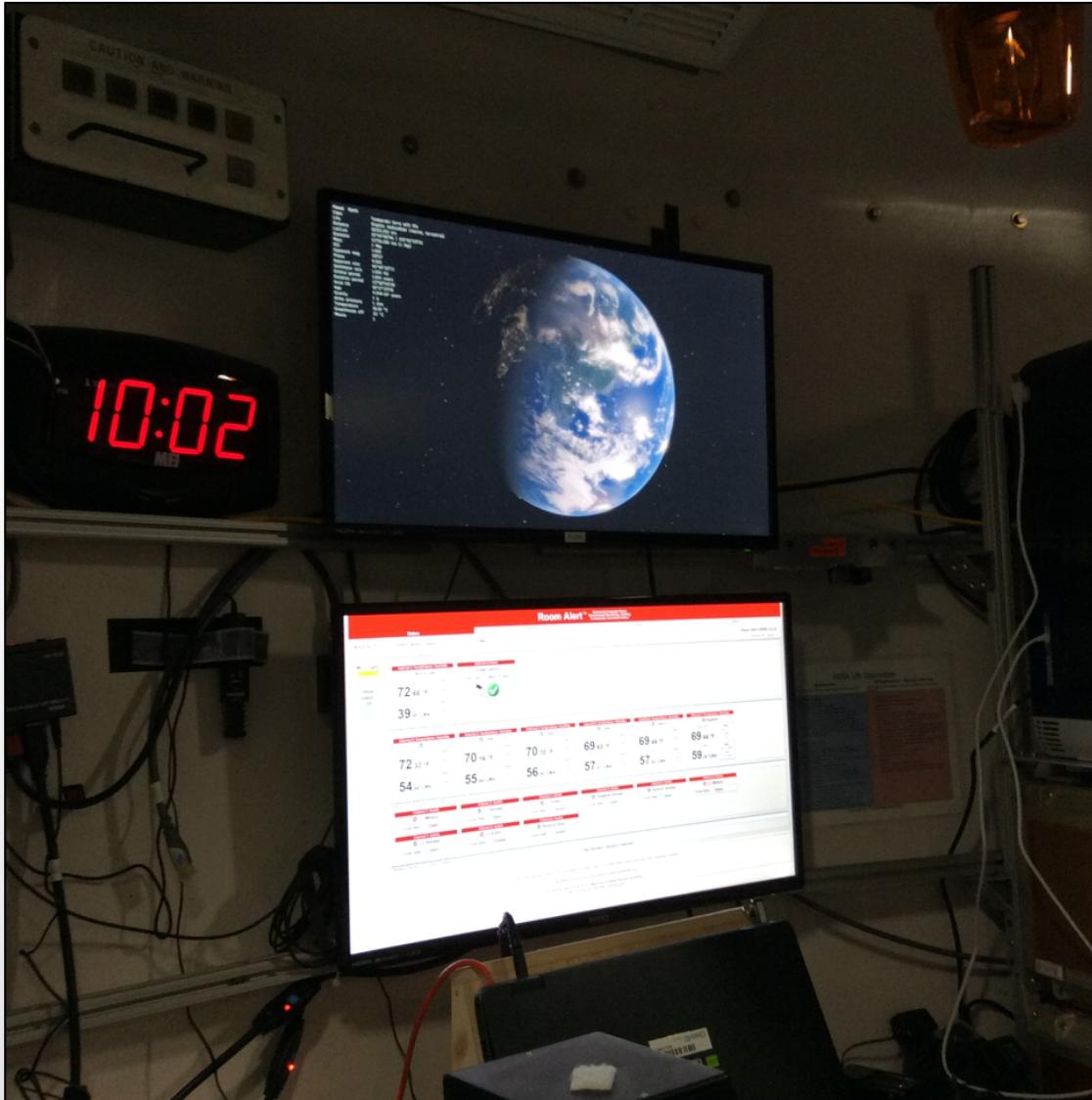
HERA XIV: Training



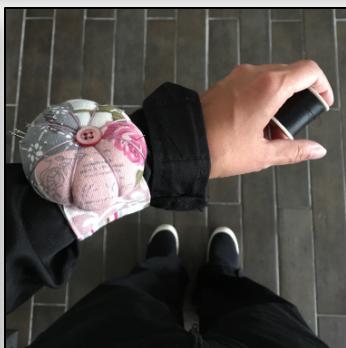
HERA XIV: Training



HERA XIV: Mission – Liftoff



HERA XIV: Mission – Dress



HERA XIV: Mission – Food



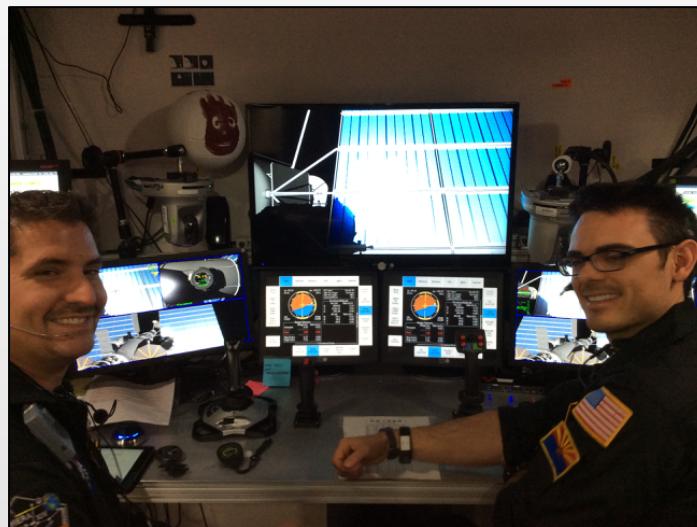
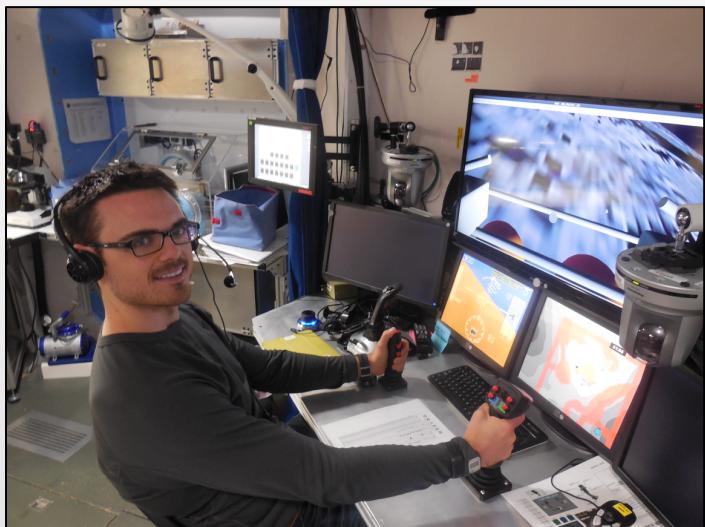
HERA XIV: Mission – Exercise



HERA XIV: Mission – Sleep



HERA XIV: Mission – Flight Simulators



HERA XIV: Mission – Psychological Surveys



HERA XIV: Mission – Asteroid Rendezvous

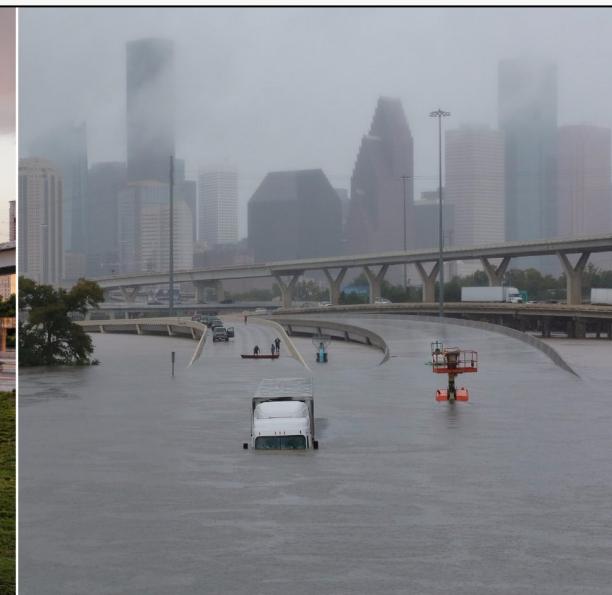
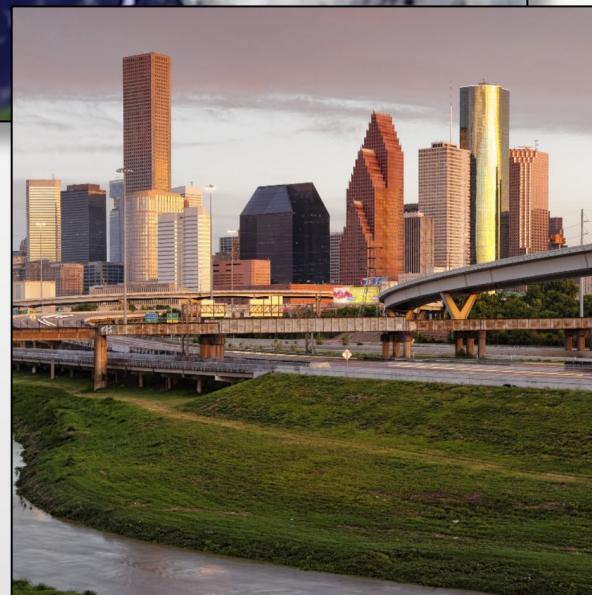


Meanwhile, back on Earth...

HERA XIV: Hurricane Harvey



<https://www.ksat.com/news/watch-new-nasa-video-of-hurricane-harvey-shows-staggering-size>

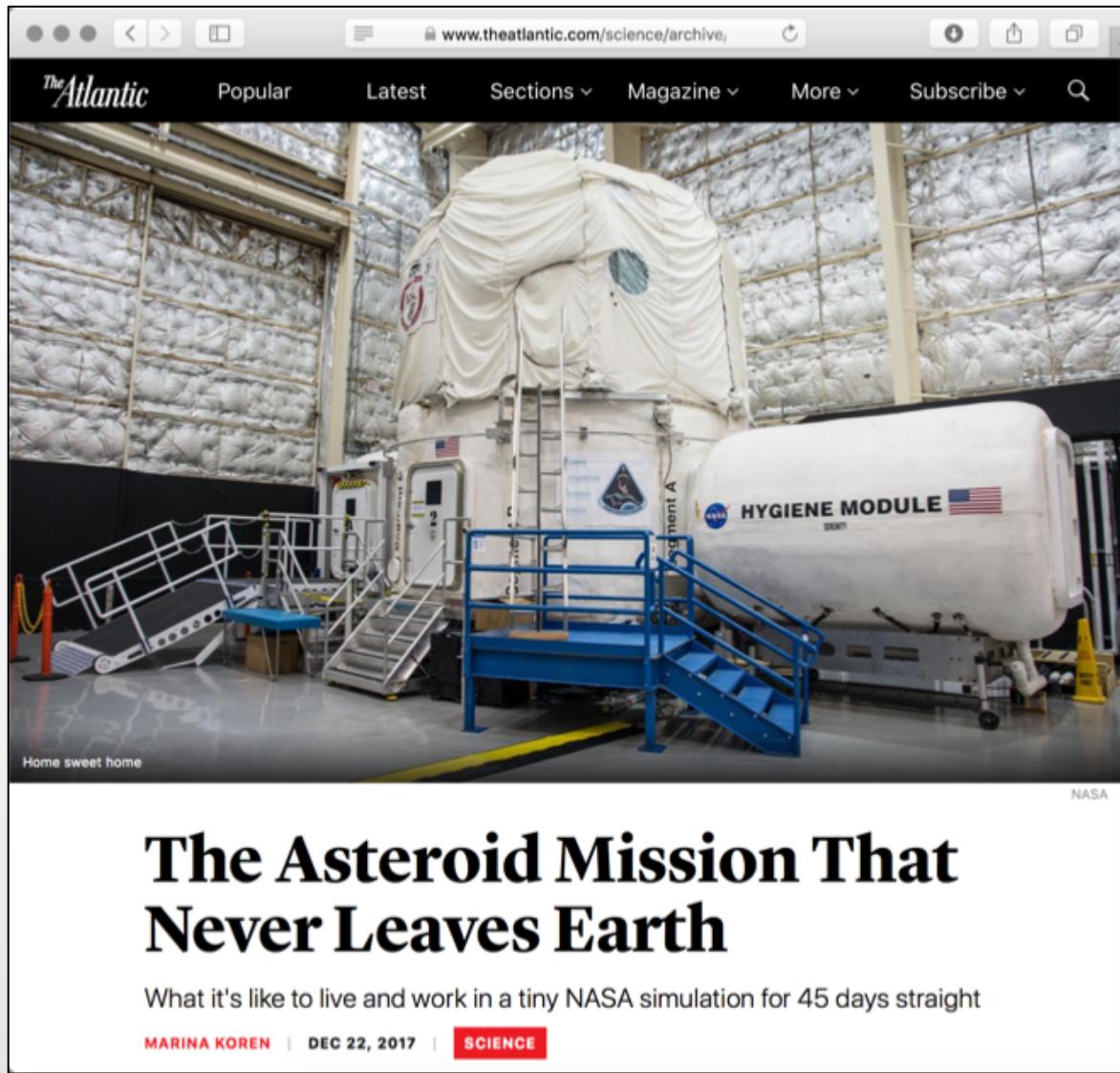


<http://www.businessinsider.com/hurricane-harvey-why-houston-flooded-2017-8>

HERA XIV: Emergency Evacuation



HERA XIV: Debriefs & Interviews



The screenshot shows a web browser displaying an article from The Atlantic. The top navigation bar includes links for Popular, Latest, Sections, Magazine, More, and Subscribe, along with a search icon. The main content features a large photograph of a white, cylindrical NASA simulation module, labeled 'HYGIENE MODULE' with the NASA logo. The module is situated in a large, white-walled room with insulation panels. A blue metal staircase with a handrail leads up to the module. The URL in the address bar is www.theatlantic.com/science/archive/2017/12/wow-its-cramped-in-here/549032/. The article title is "The Asteroid Mission That Never Leaves Earth". Below the title is a subtitle: "What it's like to live and work in a tiny NASA simulation for 45 days straight". The author's name, MARINA KOREN, and the publication date, DEC 22, 2017, are at the bottom of the article box. The word "SCIENCE" is also present in the bottom right corner of the article box.

<https://www.theatlantic.com/science/archive/2017/12/wow-its-cramped-in-here/549032/>

The Asteroid Mission That Never Leaves Earth

What it's like to live and work in a tiny NASA simulation for 45 days straight

MARINA KOREN | DEC 22, 2017 | SCIENCE

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Questions?

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