

Analog Missions: Exploring the Human Element

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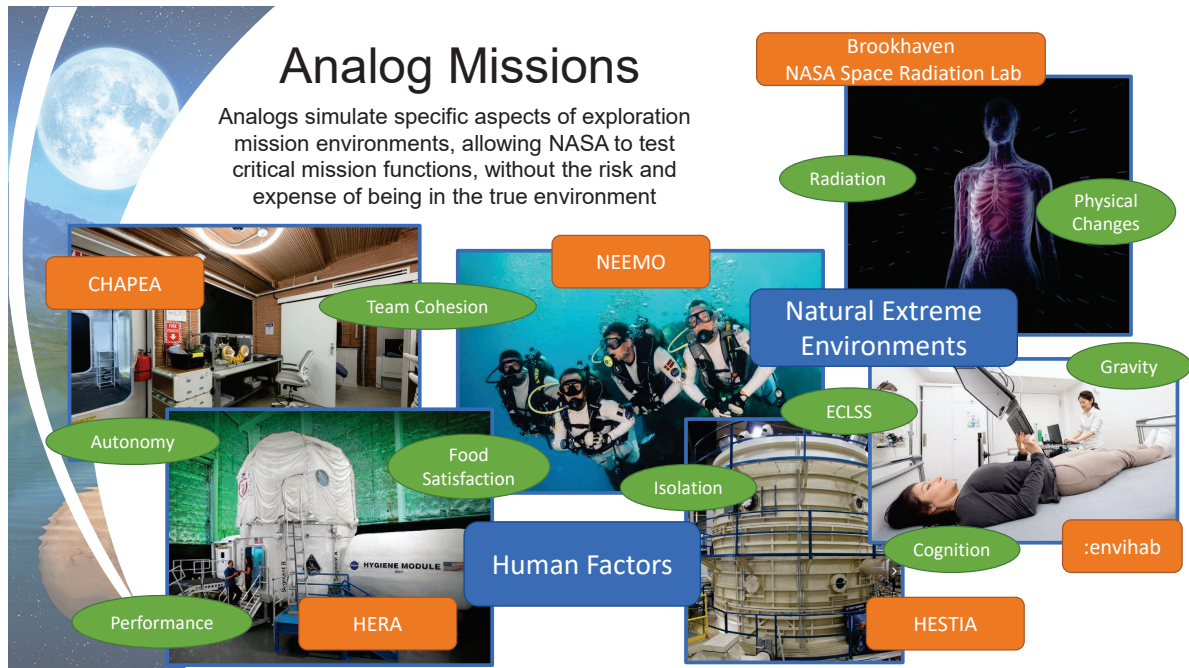
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**EXPLORE
MARSHALL**

Analog Missions

Analogs simulate specific aspects of exploration mission environments, allowing NASA to test critical mission functions, without the risk and expense of being in the true environment



HERA Basics

- HERA = Human Exploration Research Analog
- Multiple campaigns of 4 missions each, ranging from 1 week to 45 day missions, simulating a realistic mission profile and activities
- 2.5 story habitat at Johnson Space Center, roughly 650 sq ft
- ICC Analog
 - Isolated
 - Confined
 - Controlled
- Primarily a human factors & behavioral study, with some medical assessments as well
 - 'Astronaut-like' candidates are selected after undergoing rigorous physical and psychological evaluation

Commander
Gregory Sachs



Flight Engineer
Jennifer Yen



Mission Specialist
Kent Kalogera




Mission Specialist
Erin Hayward





Day-to-Day Astronaut Life...

- Conduct scientific experiments
- Routine spacecraft maintenance
- Deal with anomalies
- Train for the mission
- Eat!
- Exercise
- Public outreach
- Fill out lots of surveys
- Fill “white space”
- Sleep!



Very Brief Overview of HERA Research Topics...

- Sleep deprivation
 - Measures - Cognitive
 - Counter measures - Lighting
- Isolation
 - Autonomy / time delay
 - Monotony
- Teams
 - Decision making & roles
 - Crew selection
- Health measures