

# SPACE

TRAINING & RESEARCH



NASTAR<sup>®</sup>  
C E N T E R

# The NASTAR



# AR Center

The National AeroSpace Training & Research Center



The National AeroSpace Training And Research (NASTAR) Center (est. 2007) is the premier commercial aerospace training and research center in the world.

The NASTAR Center is the first FAA certified center able to meet the training requirements for commercial human spaceflight. It is recognized as the leader in the development and delivery of training for the commercial space industry and is uniquely positioned to enable research to improve the health and safety of humans in extreme environments.

## **THE NASTAR CENTER OFFERS:**

- **Fast, flexible access to world-class equipment and staff in one location**
- **Safe, controlled, medically monitored environments**
- **Replication of flight dynamics and trajectories**
- **Comprehensive data collection capabilities**
- **Customized programs and solutions**

# SPACE TRAINING

The NASTAR Center combines aeromedical curriculum with countermeasure application, G-tolerance, and simulated flight exposures to safely prepare pilots, passengers, and researchers for the rigors of spaceflight.

Due to the higher accelerations reached by commercial space vehicles, it has been demonstrated that physiologic and psychological stresses are encountered during flight, but can be properly managed with NASTAR training.

## THE NASTAR CENTER SPACE TRAINING PROGRAMS INCLUDE:

### Suborbital Scientist (3-Day)

Perfect for researchers, scientists and grad students, this course teaches how to effectively design and fly experiments on suborbital space missions.

*Features: Altitude Physiology, Space Launch/Reentry Training, and "Distraction Factors" Exercises.*

### Spaceflight Participant Training (2-Day)

This comprehensive course helps passengers understand their flight while reducing anxiety, manage in-flight stresses, and build confidence to maximize their flight experience.

*Features: Acceleration Physiology, G-tolerance building, Space Launch/Reentry Training.*

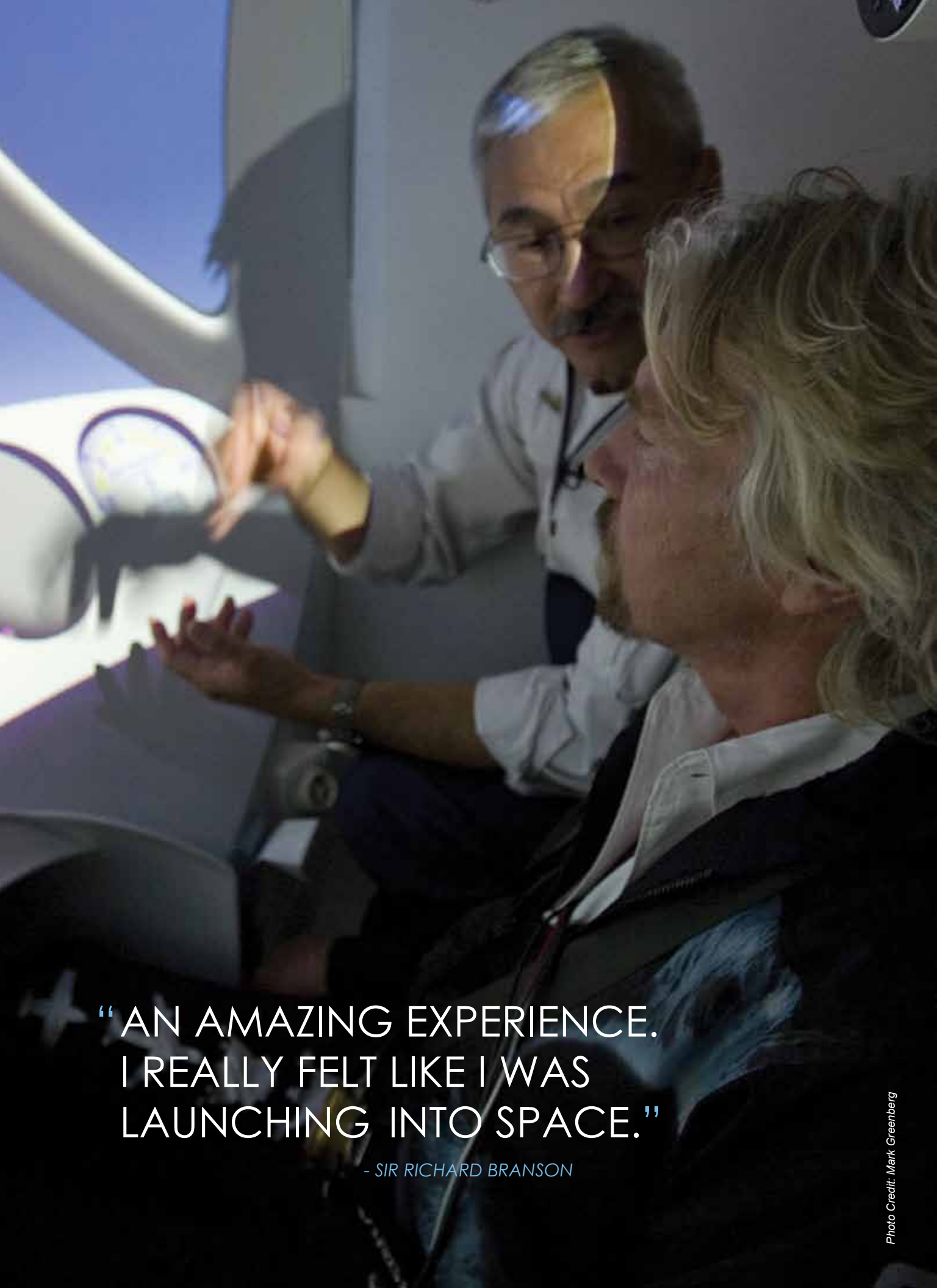
### Space Pilot Training

Customizable training program provides nominal and off-nominal trajectory training for pilots of commercial orbital/suborbital vehicles.

*Features: Altitude Physiology, Spatial Disorientation, and Space Launch/Reentry Training.*

*\*Customized programs for launch providers available*





“AN AMAZING EXPERIENCE.  
I REALLY FELT LIKE I WAS  
LAUNCHING INTO SPACE.”

- SIR RICHARD BRANSON

# RESEARCH

The NASTAR Center uses advanced technology to replicate space environments. This is useful to test the limitations of humans and components in a safe, controlled, and fully customizable real-world setting.

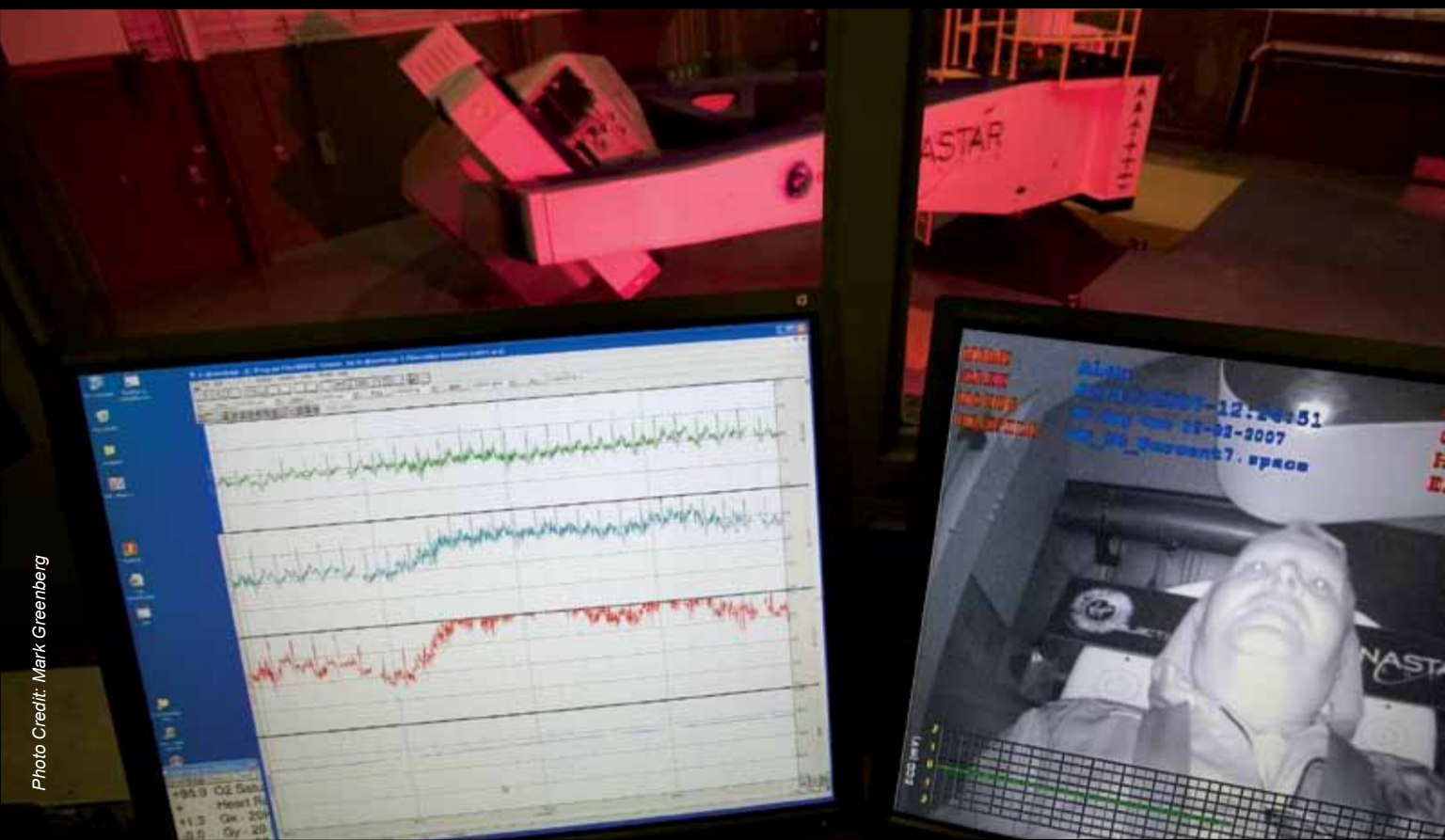
Certified flight physicians, experienced staff, pilots and test subjects, engineering services and an Institutional Review Board (IRB) are available for your service.

## MEDICAL DATA AVAILABLE:

- ECG (12 lead, 3 waveform)
- Heart-Rate & Pulse Oximeter
- Temperature & Galvanic Skin Response (GSR)
- Blood Pressure
- Respiration Pneumograph
- Electro Occulograph (EOG)
- Head Movement & Postural Dynamics Tracking
- Closed Circuit Television (CCTV) Infrared (IR) Video

## FLIGHT DATA AVAILABLE:

- G Level, Acceleration Rate, and Duration
  - Gx • Heave
  - Gy • Surge
  - Gz • Sway
- Flight Kinematics & Aeromodel Data
- Multi-Channel Audio Communication
- Flight Profile & Trajectory
- Feedback/Input Response Rate
- Flight Profile Deviation Measuring





## CENTRIFUGE

Hypo/hyper ( $\pm G$ ) acceleration and vibration flight environment. Replicates flight dynamics, visuals, audio, and cockpits.

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## ALTITUDE CHAMBER

Research hypoxia and rapid decompression (100,000 ft) environment.

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## GYROLAB

Multi-axes (360° pitch, roll, yaw, planetary) upset recovery and spatial disorientation flight environment.

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## GYROFLIGHT

Multi-axes (360° yaw; pitch, roll heave + surge, sway) emergency and spatial disorientation flight environment.

*\*Ejection Seat, Night Vision, Disaster Management, General Aviation, and Tactical Environments also available.*



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