

# **EFFECT OF MICROGRAVITY ON VISUAL CONTRAST THRESHOLD DURING STS SHUTTLE MISSIONS**

**VISUAL FUNCTION TESTER - MODEL 2  
(VFT-2)**

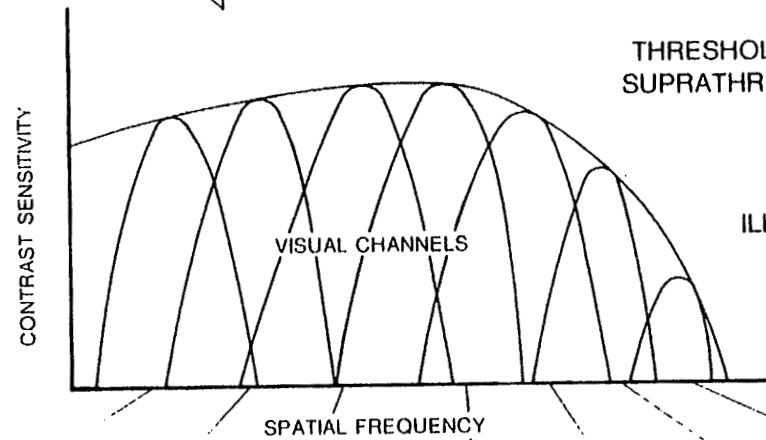
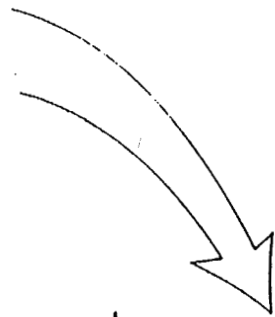
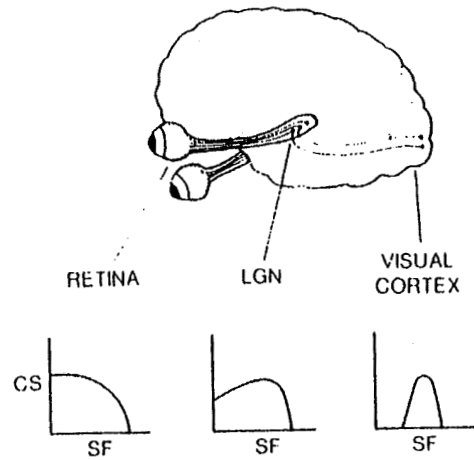
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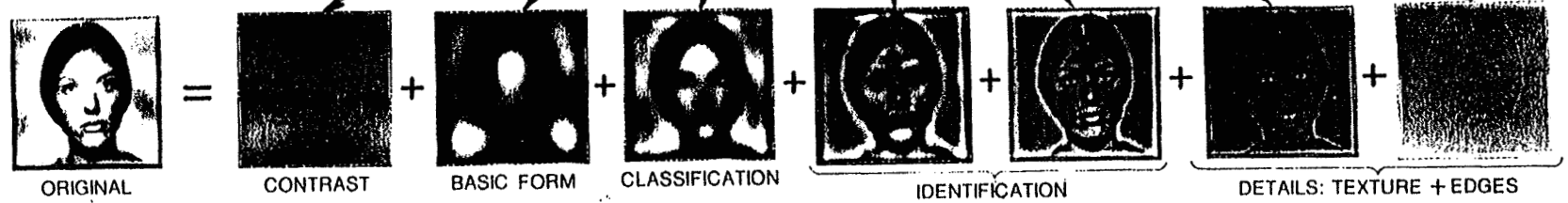
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## **PURPOSE (VFT-2)**

- **Previous contrast threshold studies, both U.S. and Soviet, at different test distances and may be affected by age, lighting, and method of target presentation**
- **Determine effect of microgravity on distance visual contrast threshold over mission duration**
- **Use variable contrast adjustment device under controlled lighting condition to obtain more precise threshold measurement**
- **Test at multiple spatial frequencies and with additional target types to more completely evaluate**



- NORMAL VISION ≡ UNIFYING METRICS
- ABNORMAL VISION ≡ VISUAL STANDARDS
- THRESHOLD AND SUPRATHRESHOLD ≡ IMPROVED VISION
- ILLUSIONS ≡ TARGET ACQUISITION AND IMAGE PROCESSING



# **METHODS (VFT-2)**

## **SUBJECTS**

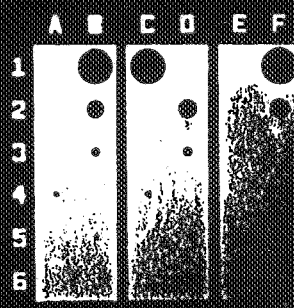
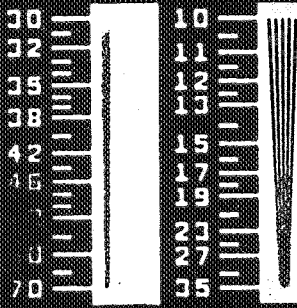
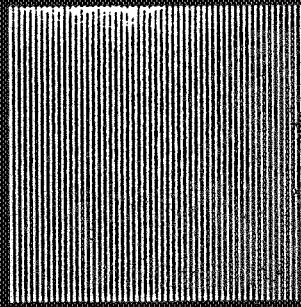
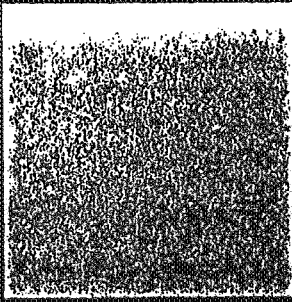
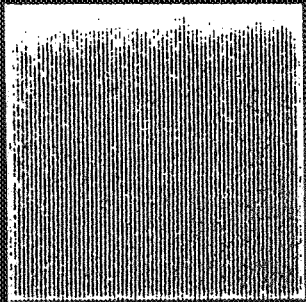
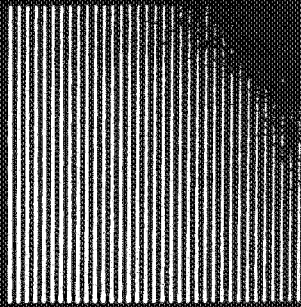
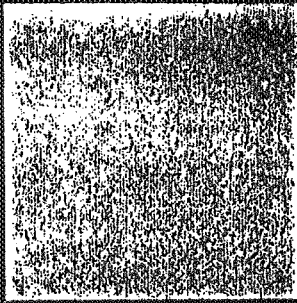
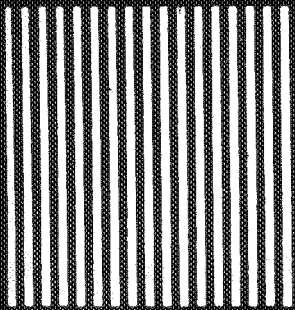
- **5 Flights, 12 STS Astronauts**
  - **3 subjects with no post flight data**
  - **1 uncorrected (no glasses)**
  - **1 SCL, 1 Toric-SCL**

## **APPARATUS**

- **Visual Function Tester - Model 2 (VFT-2)**
  - **Small, hand-held, battery powered**
  - **Three target types:**
    - **Square-wave gratings (detection task)**
    - **Disks (detection task)**
    - **Tribars (orientation task)**

## **PROCEDURE**

- **SAME AS VFT-1**



# **RESULTS**

## **VISUAL CONTRAST THRESHOLD**

- **Insufficient number of subjects for report at this time**
- **VFT-2 manifested on STS-53 (2 astronauts) scheduled to fly Dec 92**
- **Preliminary reporting of visual psychophysical study may affect subsequent data and should be avoided**