



**The Green Bank Telescope** 

**Toney Minter** 

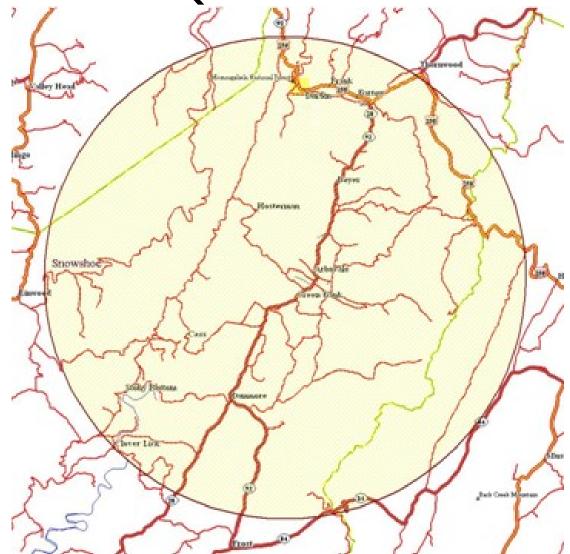
### The National Radio Quiet Zone







# WV Radio Quiet Zone







### The Green Bank Telescope







#### The Green Bank Telescope







#### **Active Surface**

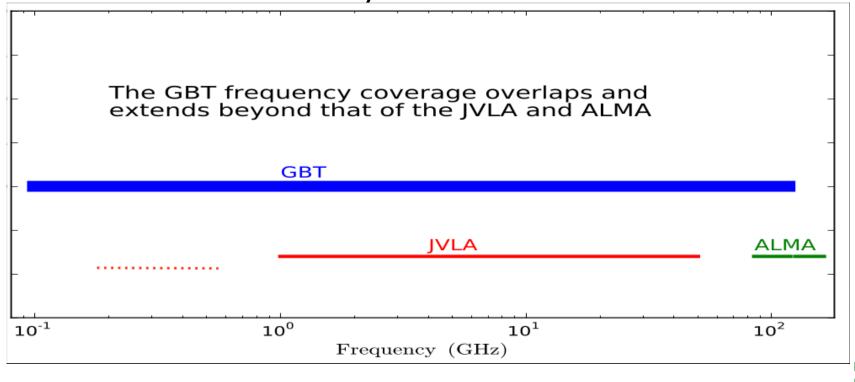






#### Frequency and Sky Coverage

- 0.1 to 116 GHz
- >85% of total sky visible δ≥-46°

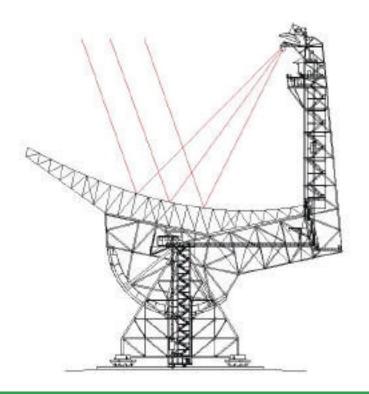






# **Optics**

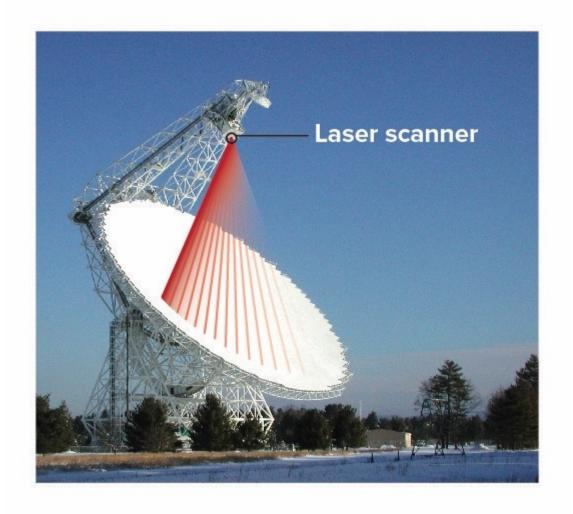
- Unblocked aperture
  - 100m section of parent 200m parabola
- Prime Focus
- Gregorian Focus







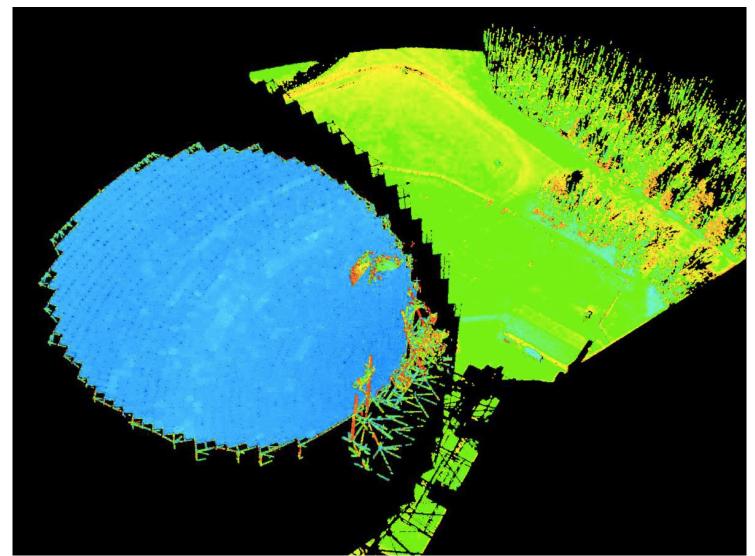
#### **LASSI**







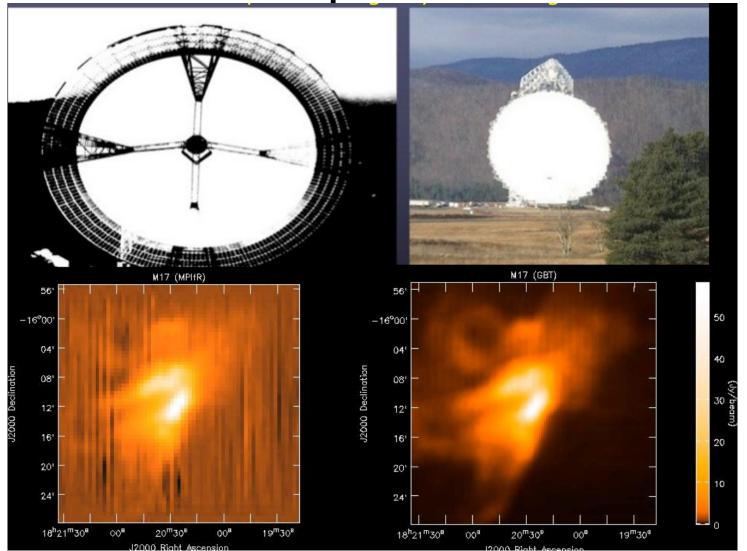
# **LASSI**







# **Unblocked Optics**

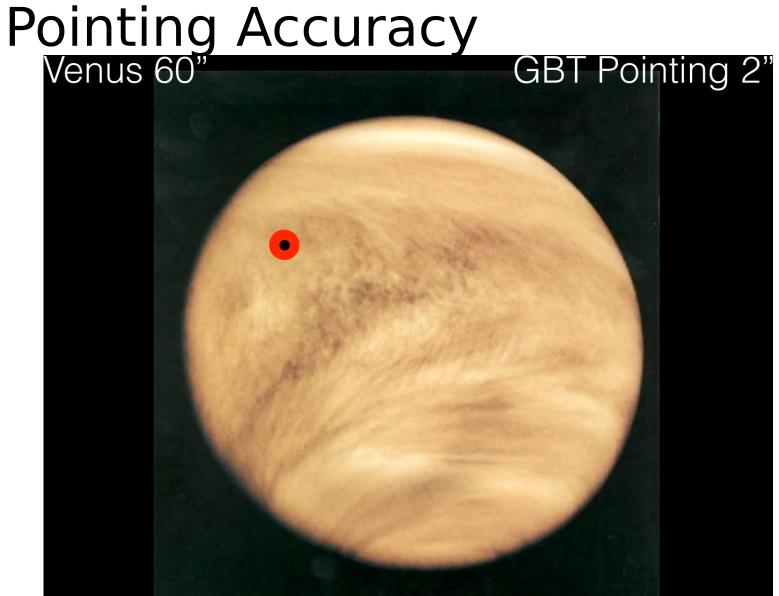








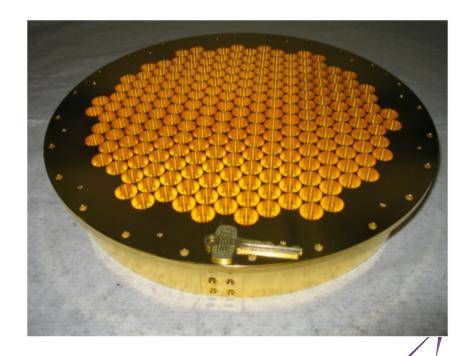






# Arrays

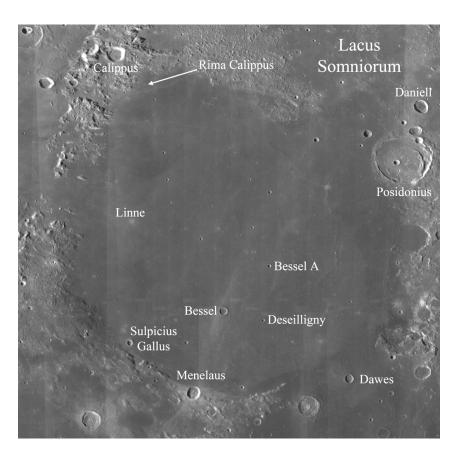


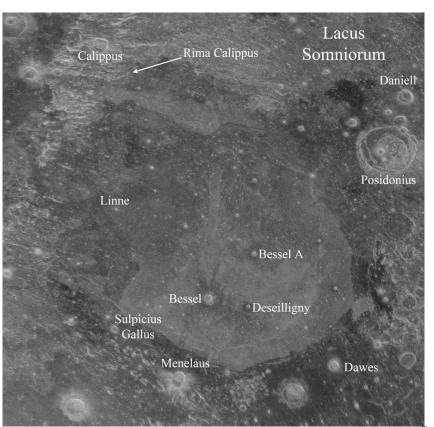






#### Radar - Arecibo transmit - GBT receive







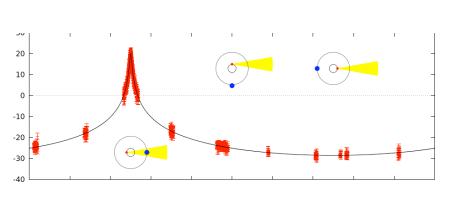


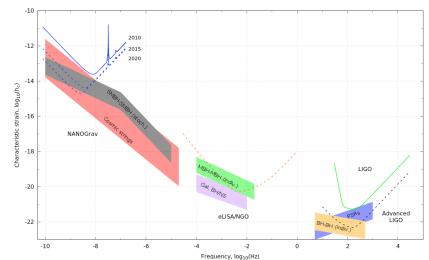
#### **Pulsars**

- Fastest pulsar
- Most Massive pulsar
- Stringent tests of General Relativity
- Relativistic Spin Precession
- Most stringent Equivalence Principal test
- Coolest/oldest white dwarf star



#### **Pulsars**

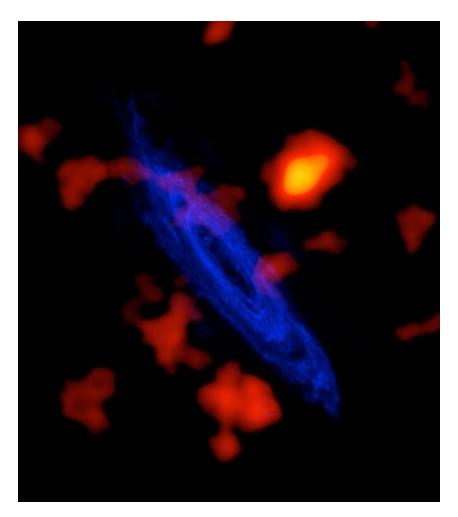


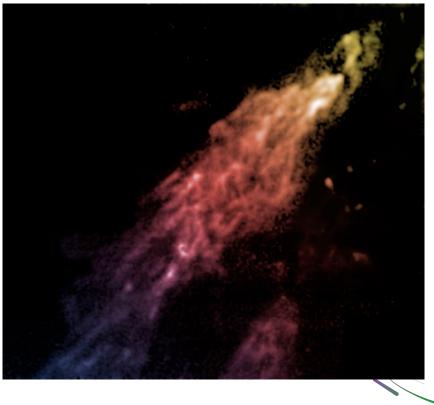






#### HI

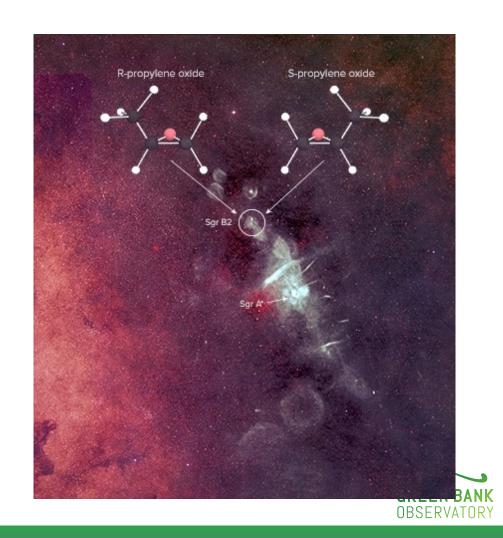




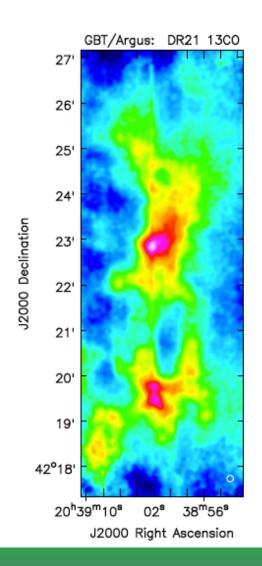
**GREEN BANK**OBSERVATORY

# Chemistry

- 19+ new molecules detected with GBT
- First interstellar:
  - sugar glycolaldehyde
  - anion C<sub>6</sub>H-
  - carbon ring benzonitrile
  - First chiral molecule



#### **Star Formation**











#### greenbankobservatory.org

The Green Bank Observatory is a facility of the National Science
Foundation
operated under cooperative agreement by Associated Universities,
Inc.