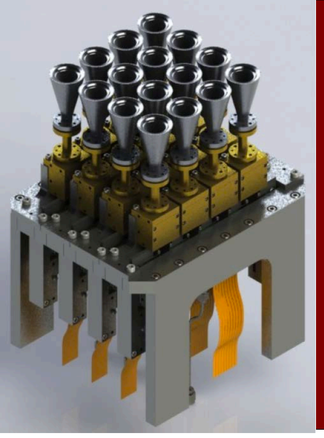
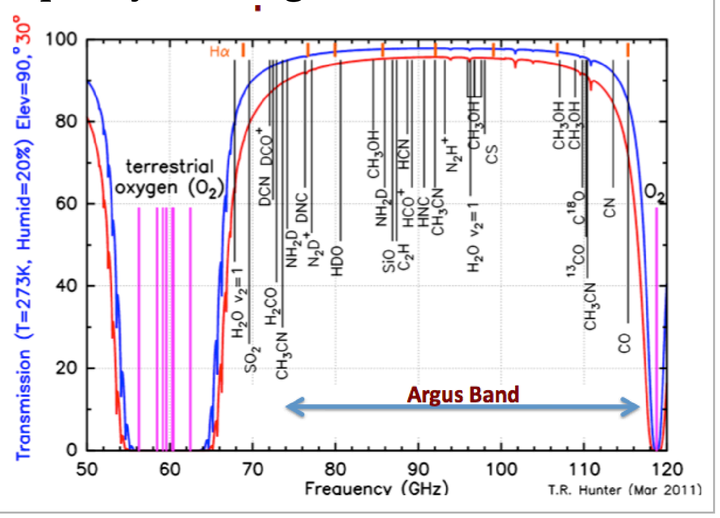


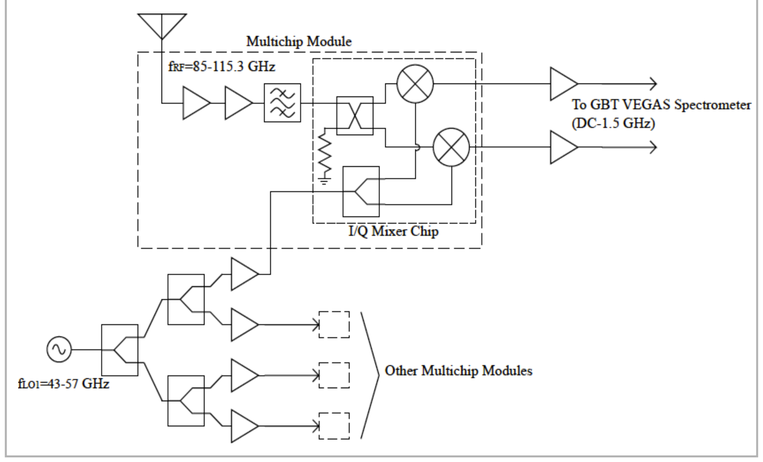
Argus: A Scalable W-band 16-pixel focal plane array for the GBT

K. Devaraj, S. Church, M. Sieth– Stanford University, Kavli Institute for Particle Astrophysics and Cosmology
R. Gawande, K. Cleary, A. C. S. Readhead – California Institute of Technology
P. Goldsmith, L. Samoska, P. Kangaslahti – Jet Propulsion Laboratory, California Institute of Technology
J. Gundersen – University of Miami
A. Harris – University of Maryland
D. Frayer – National Radio Astronomy Observatory

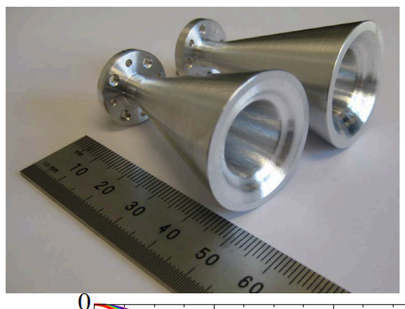
Frequency Coverage:



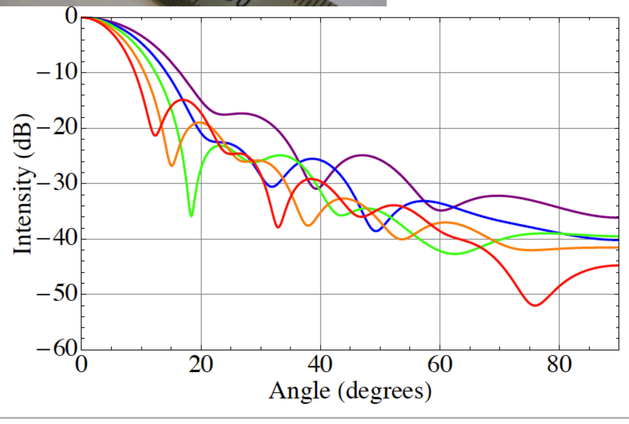
Receiver Schematic



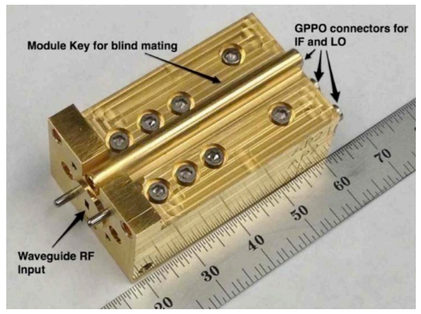
Feeds

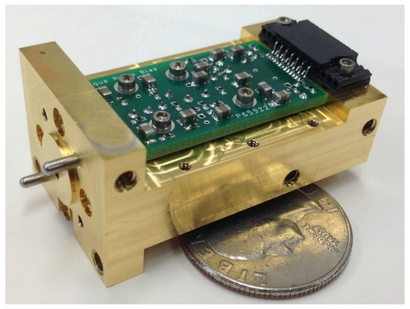


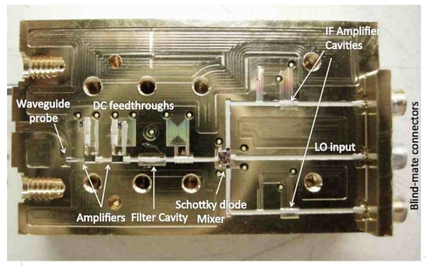
Smooth-walled spline feeds designed using analysis code based on mode matching along the horn length

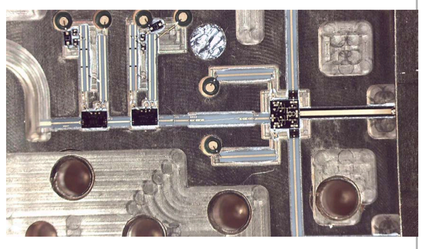


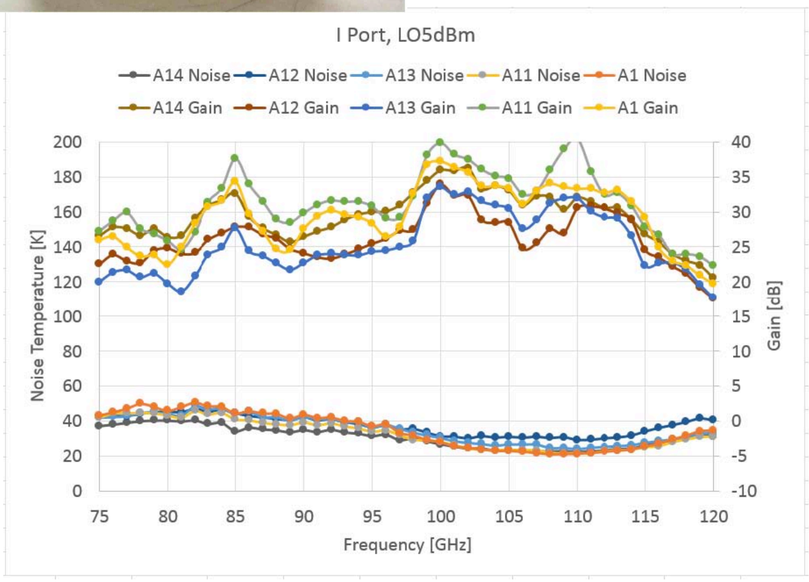
MMIC Modules:



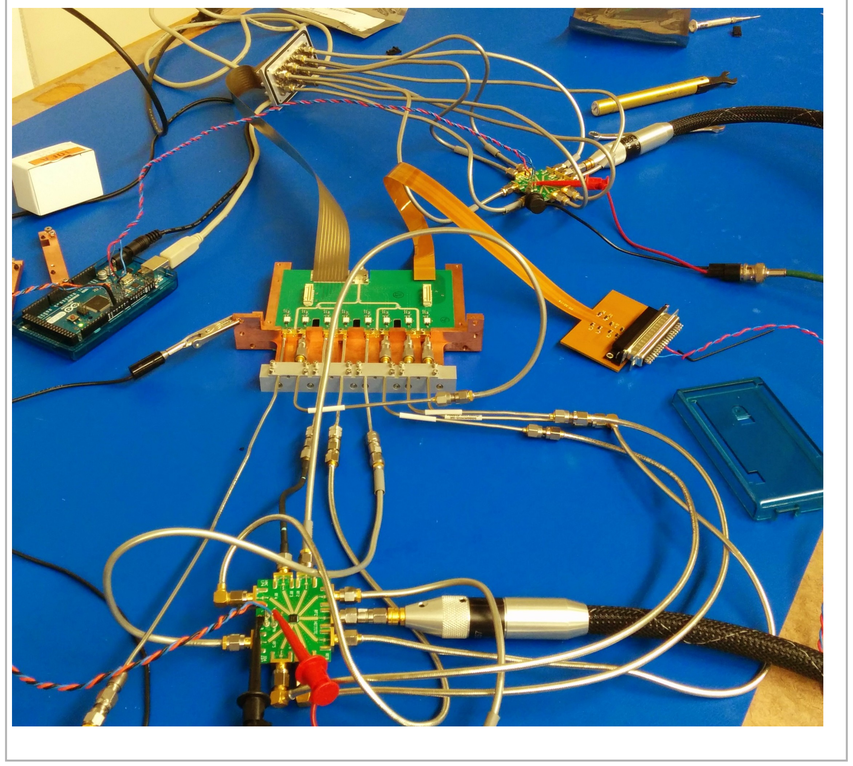




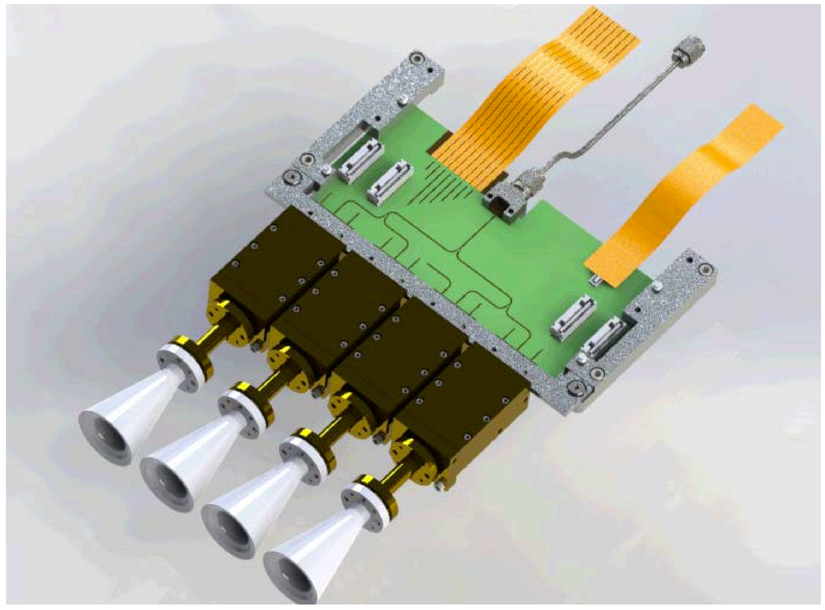




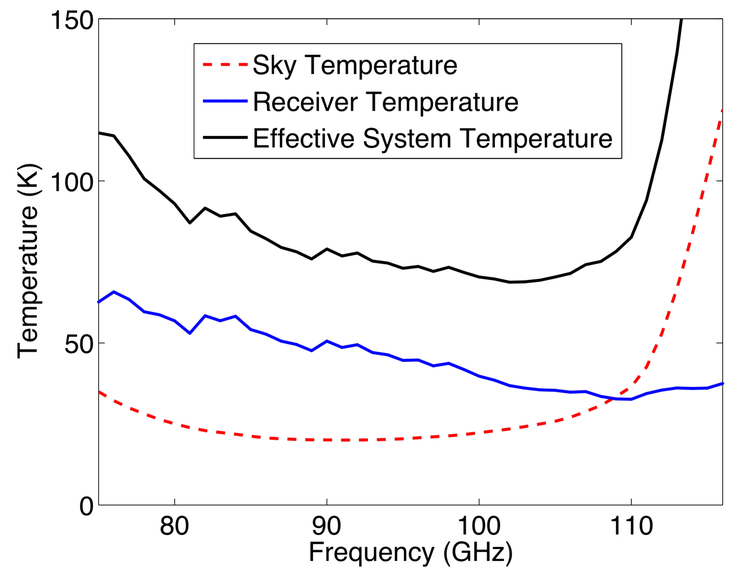
Signal Routing:



Argus Array:



System Temperature:



Timeline

- Argus project commenced in July 2012.
- Argus cryostat, modules, and routing boards are built. Component testing and integration is ongoing.
- The full 16-pixel instrument is scheduled to deploy starting November 2014.

Acknowledgments:

This research is funded by NSF ATI grant 1207825, and the preparatory work was funded by NSF ATI grant 0905855.