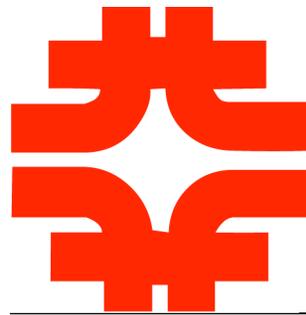


Next Step (10%) Prototype

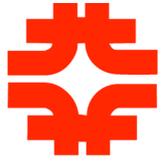
John Marriner
September 10, 2009





Goals

- Foreground subtraction is almost universally cited as a significant issue that must be addressed to establish feasibility.
- To demonstrate foreground subtraction we will need
 - ❑ A good calibration scheme
 - ❑ A large, multi-feed system
 - ❑ Hardware similar or identical to that used for the full array.
- It should be possible to do a limited science program
 - ❑ Measure galaxy synchrotron radiation spectrum.
 - ❑ Measure time variation of synchrotron radiation
 - ❑ Maybe measure some 21 cm emission



Why a new facility?

- Pittsburgh
 - Frequency band too small
 - Too much cultural radio noise
- ATA (for example)
 - Too few beams
 - Poor S/N (long baselines)
 - Limited access and flexibility
- Need a prototype for a survey facility



What do we need?

- Science & technical goals
- A technical design
 - ❑ 3 cylinders (for redundancy – cross-checking)
 - ❑ 2 polarizations (need to check that both are needed)
 - ❑ 128 feeds per cylinder (to test FFT concept)
 - ❑ Use 1.2 GHz for technical & science reasons?
- Analysis plan
 - ❑ Plan for foreground subtraction
 - ❑ Criteria for success



Survey Sky Map

Clean Array Sky Map

