



National Radio Astronomy Observatory

Be an RFI Detective!

Radio astronomers study the radio waves produced by cosmic objects. Objects like comets, exploding stars, and even black holes in distant galaxies! But, radio waves made by your favorite radio station, your microwave oven, or a cell phone tower can make it impossible to detect these much weaker signals from space. Radio Astronomers call man-made radio waves “radio frequency interference” or RFI.



At the National Radio Astronomy Observatory we work hard to reduce RFI levels around our radio telescopes. We don't allow microwave ovens, digital cameras, or cell phones near the telescopes. But we can do a better job if you help us. Use the Quiet Skies Radios to find other sources of RFI, and report back to us!

Make and detect RFI !

What you need:

- a radio - preferably a portable one - that has an AM and FM dial.
- small batteries (if you raid the flashlight - don't forget to put them back!)
- a piece of wire

What to do:

Turn on your radio. Choose AM and find a place low down on the dial where there are no stations.

What do you notice? Can you hear anything? _____

Record the Dial setting: _____ kHz.

Tape one end of the wire (it needs to be bare) to one end of the battery. Or just hold it there. Touch the other end of the wire to the other end of the battery. When do you hear static from RFI??

Try an experiment: Change the dial on the radio and repeat the battery experiment. Is the interference better or worse?

Dial Setting (kHz)	RFI Noise (1 = soft, 5 = loud)

Try the FM dial.

Dial Setting (MHz)	RFI (1 = soft, 5 = loud)

