Radio Astronomy: Lesson 1
FOLLOW UP DISCUSSION

a. What is the telescope detecting?

   Radio waves

b. What is the source of these radio waves? How do we know?

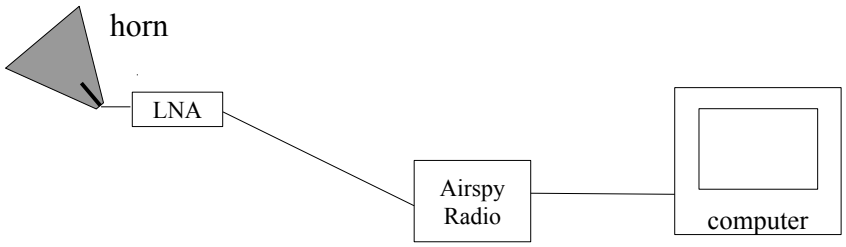
- The signals come from outside the earth

  → If we point the telescope at different likely sources on earth, e.g. buildings, radio towers, other man-made structures, the "peaks" we observed do not show up. Also, the peak signals are strongest from "empty" sky, and the signal does not vary significantly over a large range of sky.

- The signals are radio waves

  → The telescope consists of an antenna (the wire in the can) and a low-noise amplifier (LNA) designed to magnify and filter signals for the specific frequency 1420 MHz, which is in the radio frequency range.

c. Horn telescope diagram



i. Hardware
   - horn & tin can
   - metal wire
   - cables
   - amplifier
   - dongle
   - computer

ii. Software
   - Gnu Radio – open source software defined radio program