

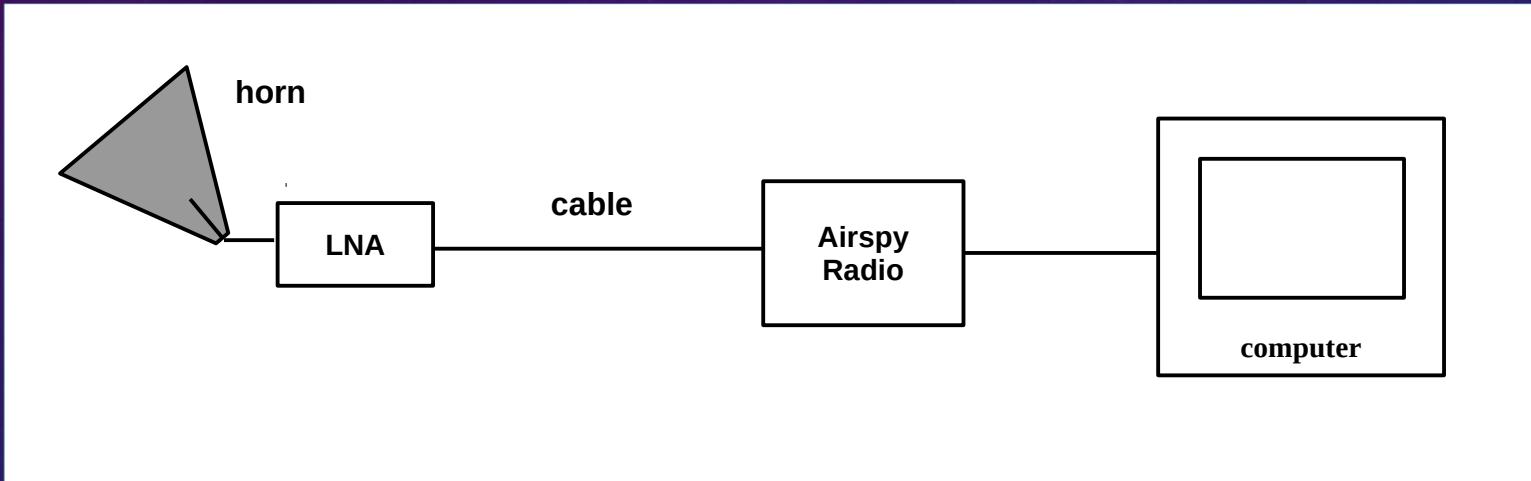
Horn Telescope Design and Construction

From a presentation by Daniel Bonnett at DSPIRA 2018
Mathematics & science Teacher
Chandler Academy, Kanawha County, West Virginia

TELESCOPE DESIGN

- The DSPIRA Horn is designed as an “optimal” horn.
 - (which means that the angles of the trapezoidal sides are set for the resolution of radio waves that are collected)
- The DSPIRA Horn is designed as an “inexpensive” horn.
 - (which means that any science classroom teacher can construct this with their students as a classroom lab activity.)

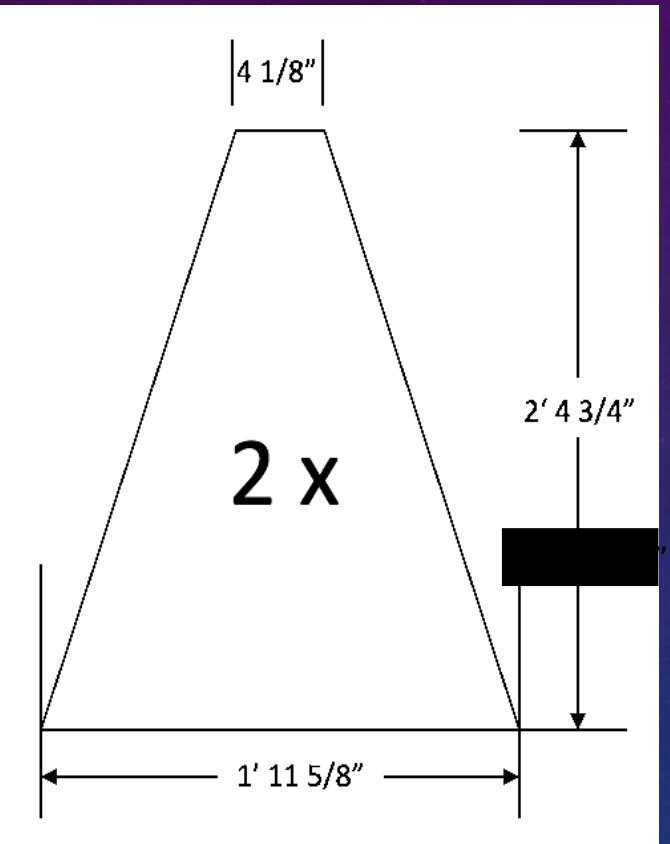
TELESCOPE SCHEMATIC



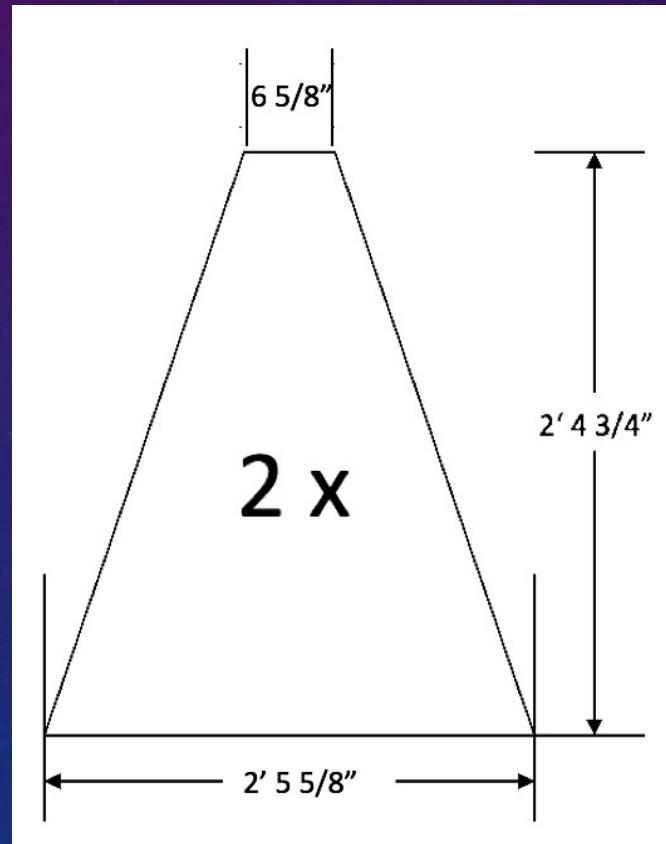
HORN CONSTRUCTION MATERIALS

- 1 gallon rectangular paint thinner can
 - (F-style metal gallon container)
- The horn sides can be cut from a single 4x8 ft sheet $\frac{1}{2}$ " to 1" thick aluminized home insulation Styrofoam board
- duct tape
- aluminum tape
- 2" x 4" boards
- 2" x 2" boards
- screws

MEASUREMENTS OF THE SIDES



Smaller side of
horn.

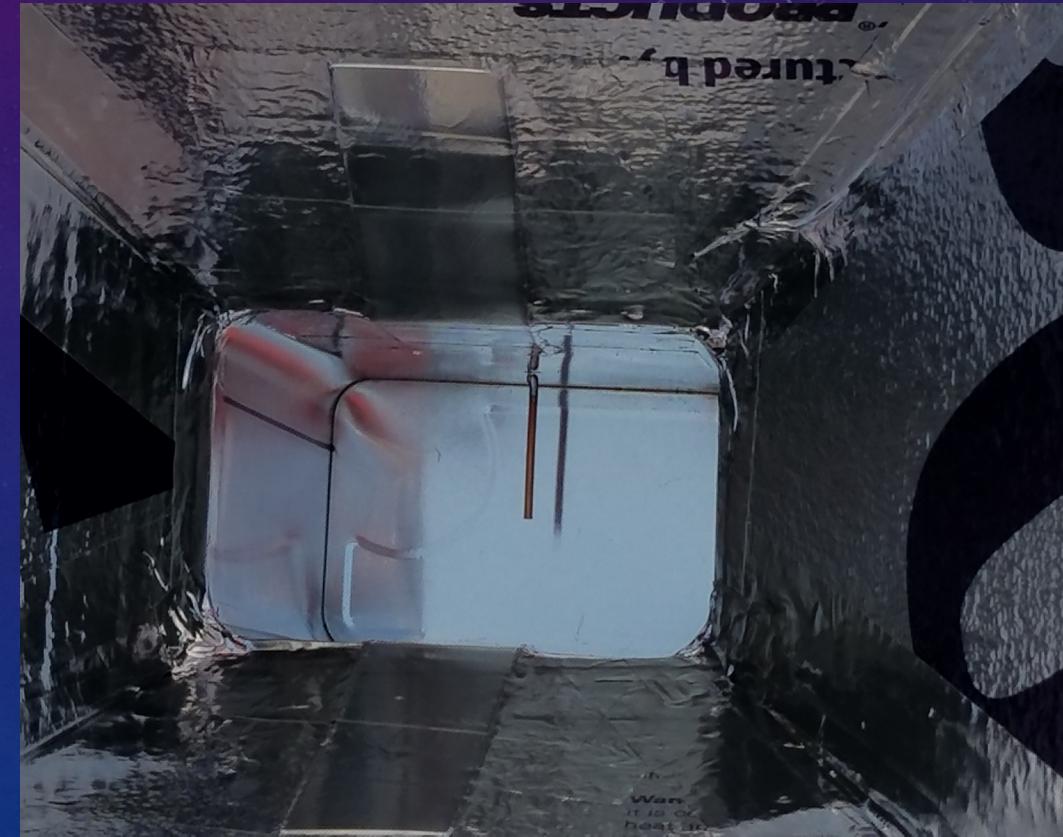
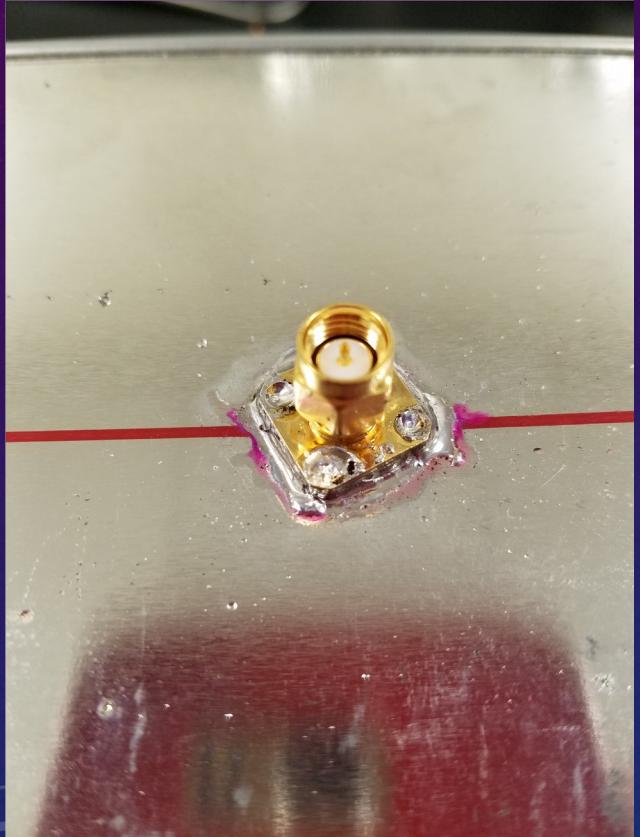


Larger side of
horn.

Piecing the sides together



The Can Antenna



The LNA mounts directly to the can.



HORN STANDS

CONSTRUCTION



Horn Base Mount

