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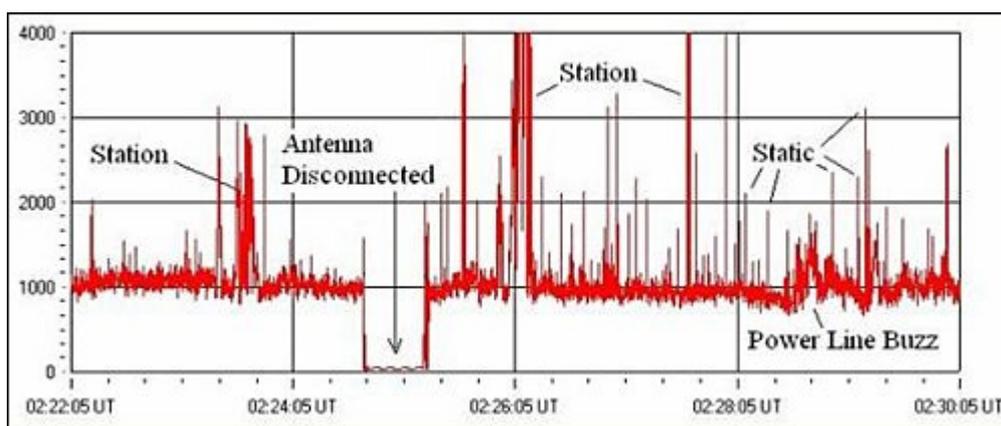
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## Testing the Receiver and Antenna Together

Before making your first observations of the Sun or Jupiter it is a good idea to set up the antenna and receiver to confirm that everything is working properly. For this test you can set up either a single dipole or the dual dipole array.

With no antenna connected, and the receiver audio gain control set between the 12 and 3 o'clock positions, you may hear a slight hissing sound in the headphones (or loudspeaker if you are using an amplified speaker). With the antenna connected, the static sound should increase significantly. (There is usually a loud crackling sound as the antenna connector is being screwed on).

If your Jove receiver is connected to a computer running Radio-SkyPipe you should see a significant increase in the background trace when the antenna is connected. The trace should rise sharply as you tune across stations. The SkyPipe trace is normally set at a level of about 1000 on the vertical scale. This level is set using the receiver volume control and the software record volume control found on your computer. The receiver audio control should be set near the 12 o'clock position for solar observations and may be run around the 3 o'clock position for Jupiter observations



With the antenna connected you should hear background static (this is galactic background radiation - caused by relativistic electrons spiraling in our galactic magnetic field). As you tune the receiver dial you may hear stations. When listening for Jupiter or the Sun you should tune to a clear frequency between the stations. You may also hear pops and snaps due to distant lightning. (If there is nearby lightning don't set up your antenna and receiver).

Depending on your geographic location you may hear a loud station that is everywhere on the dial.

Fortunately this problem does not happen very often. It is caused by a strong short-wave station overloading the receiver. This interference is sometimes heard in daylight hours during times of maximum sunspot activity, but has seldom been a problem during Jupiter observations at night. You may experience this type of overload for a few minutes or a few hours when propagation conditions are just right. If the problem persists during daylight attempts to monitor the Sun you may contact the receiver designer at [rf@hawaii.rr.com](mailto:rf@hawaii.rr.com) for information on a filter that has proven successful in eliminating this interference source.

If you do not hear a significant noise increase when you connect the antenna either there is a short or open circuit in the antenna wiring or the receiver is not working correctly. You can trouble shoot the antenna by hooking up the individual dipoles directly to the receiver (bypassing the power combiner). If either dipole individually produces the desired receiver noise increase then the problem must lie with the other dipole, the power combiner, or the lead-in coax. If you are unable to obtain the noise increase with either dipole individually, or connected together as a pair, then the problem must lie with the receiver (or its power supply or some audio cabling . perhaps between the receiver and the computer or audio amplifier).

The noise that you hear with the antenna connected should have a steady hissing static sound (except for stations and an occasional static pop or crash). If there is a raucous buzzing sound (which may be intermittent) it is probably due to either arcing on a nearby power line or perhaps you are using a "wall wart" power supply that is poorly regulated. It is important that the power supply for the receiver and speaker system produce a clean DC voltage. The recommended power supply is either a 12 volt lantern battery or the Jameco ([www.jameco.com](http://www.jameco.com)) part number 162996 power supply (about \$12 including shipping if paid online).

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## Radio JOVE Radio Telescope

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- Last modified: 06 Jun 2006