

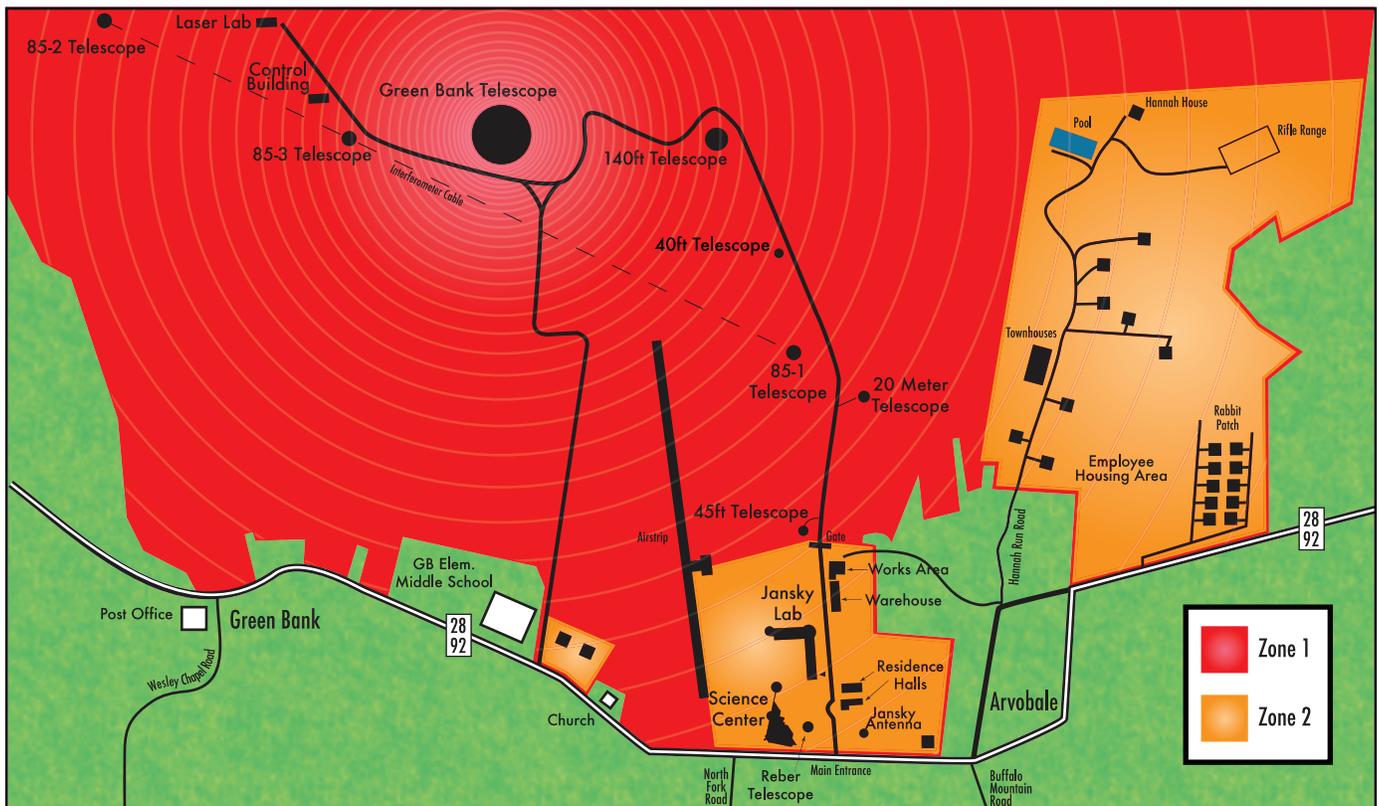


Interference Protection Group • National Radio Astronomy Observatory

“We have met the Enemy, and He is Us.”

**NRAO Green Bank Site RFI Regulations for Visitors.
PLEASE READ!**

The NRAO Green Bank Site is a unique resource for Radio Astronomy. We are located in the **National Radio Quiet Zone (NRQZ)** which provides protection from permanent, fixed, licensed transmitter services. Our location, surrounded by National Forest and the mountainous terrain of West Virginia, also serves to protect observations. Additionally, the West Virginia Radio Astronomy Zoning Act allows us to prohibit the use of any electrical equipment within a ten mile radius that causes interference to Radio Astronomical Observations. On the Green Bank Site itself, our protection policy differentiates two zones, one for the laboratory, housing, and visitor facilities (**Zone 2**), and one for the Radio Astronomical Instruments themselves (**Zone 1 aka the Radio Astronomy Instrument Zone**) as illustrated on the following map:



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In **Zone 1**, the “ground zero” of our instruments, the general philosophy for interference mitigation is a preventative, proactive approach; interference potential is assessed through testing, and equipment is shielded, filtered, etc. as necessary *before* installation. We require that all installed equipment be RFI mitigated to comply with the limits stated in ITU-R RA.769, assessed with respect to the prime focus point of the GBT at its highest elevation. We additionally attempt to protect this most sensitive zone by limiting motorized traffic to diesel vehicles to avoid strong broadband emissions from spark plugs. We also instruct tourists to leave their Gameboys, Ipods, etc. behind when they go on the site tour, whether by bus tour or foot traffic. So, for **Zone 1**:

- If your work involves installing equipment in **Zone 1**, bear in mind that it must be tested in the anechoic chamber and mitigated to the required levels *before* you install it.
- For portable equipment, bring only what is absolutely necessary for your work into **Zone 1**, and don't leave it there – that counts as “installed”.
- Only diesel vehicles are allowed in **Zone 1**.
- Remember that the GBT isn't the only instrument on site; we have many projects sharing our facility. Hence, coordinating with the GBT observation schedule does not protect other research; please be considerate.

In Zone 2, the laboratory, housing, and visitor facilities where you are staying, we differentiate between intentional radiators and unintentional radiators. An intentional radiator is any electronic device that intentionally transmits radio waves. All intentional radiators except for a select list of coordinated devices which are absolutely necessary for safety (the 43 MHz site radios, for instance) are strictly prohibited in **Zone 2**. Prohibited devices include cordless telephones, and wireless networking devices. A good rule of thumb is, if it uses RF energy to communicate, it almost certainly exceeds the ITU-R RA.769 limit, and we ask that you please don't use it here. With regard to unintentional radiators, such as your laptop without its wireless card, we request that you use them as needed, and power them off when not in use. Certain unintentional radiators in **Zone 2**, particularly those that have particularly strong emissions, such as microwave ovens, and those that need to be powered on 24/7, such as the network servers, are confined to shielded rooms or shielded enclosures. Employees who live in observatory housing are bound to these regulations by a clause in the housing lease. As a visitor, all you need to remember for **Zone 2** is:

- Intentional radiators are prohibited, please leave them at home or powered off and in your car.
- Use electronic equipment as necessary, but please power it off when you're not using it.

Following these simple guidelines goes a long way towards preserving the relatively RFI-quiet environment here. ***Your cooperation is vital*** to protecting the research that goes on here. If you have any questions or concerns regarding our on-site RFI policies, please contact Carla Beaudet at extension x2126.

