

# Natural Radio

*News, Comments and Letters About Natural Radio*

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I mentioned a couple of months ago that I was moving my audio and video production business from a rented space into my home. As often happens (at least in my experience), my estimation of the work required for this move fell far short of the work actually needed to accomplish it, and thus I am still in remodeling mode. My video editing room/office is complete including a new computer, and the audio room is operational but some acoustical tweaking is needed.

These type of projects are usually a learning experience and of course an opportunity to acquire new tools. Father's Day conveniently fell in the middle of the project and my sons and daughters-in-law presented me with a battery powered Ryobi drill and impact driver. I then purchased the matching hammer drill. If you ever need to drill into concrete, a hammer drill is far superior to a rotary drill and makes the job simple. The bits also last a lot longer.

From a learning standpoint and completely off-topic, but possibly of value to some of you, I discovered an insulation made from old blue jeans that has superior sound absorbing and insulation properties. It has much better acoustical properties than fiberglass and it's also "green" as it is made 80% post-consumer recycled content, and doesn't have airborne particulates like fiberglass does and contains no harmful chemicals. It is called Ultra Touch™ Denim Insulation and Bonded Logic makes it. I will be using this for sound absorption in the studio. It would find good use in home theatres and for general insulation use.

However, enough digression and back to Natural Radio. The spectacular views of Pluto and the success of NASA's New Horizon mission have dominated the scientific news the past this summer so you may have missed the story about HAARP.

The High Frequency Active Auroral Research Program, or HAARP, is an ionospheric research program jointly funded by the U.S. Air Force, the U.S. Navy, the University of Alaska, and the Defense Advanced Research Projects Agency (DARPA) with facilities near the town of Gakona Alaska.

Construction of the HAARP Station began in 1993. The final working version of the e Ionospheric Research Instrument (IRI) was completed in 2007. The IRI is the main instrument at the HAARP Station. It is a high-power RF transmitter operating in the high frequency 2 – 10 MHz region of the HF band and is used to temporarily excite a small area of the ionosphere for a variety of research purposes.

HAARP has been a source of controversy and wonderful fodder for the conspiracy theory mill. It was accused of being capable of modifying weather, jamming all global communication systems and exerting mind control over people, causing earthquakes in Haiti, droughts, storms and floods, diseases such as Gulf War syndrome and even interfering with wildlife migration patterns. It inspired Nick Begich's 1995 book,

*Angels Don't Play This HAARP, Advances in Tesla Technology*, which greatly fueled the conspiracy machine.

Last year, in early 2014, in a letter to Congress, the Pentagon announced they would be dismantling the facility. Shutdown began last June, after one final experiment at the location. Dismantling of the facility was to begin quickly to avoid continuing operation and maintenance costs and of course fueling new rumors that the military was hiding secret technology.

There was an outcry from the scientific community over losing such an important research facility and the government postponed the dismantling of the facility until July of 2015. Finally, after several years of negotiating, the Pentagon announced that ownership of the facility would be passed to the University of Alaska Fairbanks.

UAF spokeswoman Marmion Grimes says UAF will take ownership of the \$200 million facility next month. "It's a transfer, and next month the facilities and equipment will formally transfer from the military to the university. And then we have two years to work with the Air Force to come to an agreement to transfer land."

The facility sits on 1500 acres of land near Gakona, Alaska and the university will have to negotiate with the Air Force for ownership.

Bob McCoy, who heads UAF's Geophysical Institute stated, "It's a good catch for the state of Alaska and the university in Fairbanks to get this excellent facility. And both the chancellor and the president both saw that, and were eager to have this added it to our portfolio here."

HAARP will then operate like other scientific research facilities with support coming from grants and those doing research there. The university has plans to expand its ionospheric research programs there as UAF faculty and graduate students have used HAARP for research in the past.

This is really good news, because there are only 3 facilities like this in the world, the other two being in Norway and Russia, with the HAARP facility being the largest and most sophisticated. Ionospheric and magnetospheric research can now continue with possibly the chance for us citizen scientists to participate by listening for stimulated emissions from the experiments.

In addition, despite the fact that the IRI gets most of the publicity, several other precision instruments exist at the HAARP site including:

- A fluxgate magnetometer built by the University of Alaska Fairbanks Geophysical Institute.
- A digisonde that provides ionospheric profiles.
- An induction magnetometer that measures the changing geomagnetic field in the Ultra Low Frequency (ULF) range of 0–5 Hz.

I am also hoping for a new website, as the former one, now defunct, had a wealth of real-time ionospheric information. Let's hope that UAF's acquisition of the HAARP facility will open the doors to new VLF and Space Weather research and discovery.