Natural Radio

News, Comments and Letters About Natural Radio

December 2001

This has been an incredible month for Natural Radio activities. The solar flares and associated geomagnetic storm early in November lit up the skies across most of North America on November 5 & 6. The INSPIRE coordinated listening on November 17 & 18 was punctuated by a spectacular Leonids meteor shower. Finally, the IMAGE satellite will begin transmitting VLF signals shortly, and continuing into early December. I hope you had a chance to be part of one of these events.

Work on the Natural Radio CD is progressing slowly but steadily and depending on when I receive some other pieces that have been promised, should hopefully be completed early next year.

As we enter December and wrap up this first year of the new millennium that has shown us both the worst and best sides of humanity, may the joy and peace of this holiday season be with you and your families. God bless America.

Image Satellite Test **As we go to press, I have been informed by Bill Taylor at NASA of a VLF transmitting test from the image satellite. There is a good chance that the test will still be in progress as you receive this.**

The VLF transmissions will be 0.125 seconds on, 0.375 seconds off, at 5, 7, 9, 11, 13, and 15 kHz, repeated over and over. The transmissions last approximately 45 minutes.

As I write this, these are the start times of the test for orbits passing over the US. For more up to date information, check the LWCA Website and the Message Board.

11/26	0120 UT	New Jersey
11/29	0029 UT	Maine
11/30	0457 UT	Washington
12/03	0406 UT	California

I'll report next month if there were and positive results in receiving signals from the satellite.

Leonids I got up at 3 AM this morning (Nov. 18) to view the Leonids and do a little listening to see if they were making any audible Natural Radio noises, but due to the unusually warm late fall weather here in Illinois, we were totally socked in by fog. Mike Mideke and Shawn Korgan had better results. See correspondence.

CME Causes Aurora The CME and resulting geomagnetic storm on November 5 & 6 caused widespread aurora across the U.S. I had been watching the Space Weather site throughout the day and went outside about 8:30 pm local time. For the first time in

this solar cycle, a geomagnetic storm occurred without the sky being obscured by clouds! The whole sky was glowing green with a red patch off to the east. Rays seemed to be emanating from a point about 15 degrees south of the zenith. Although the moon had just risen and was at about 80%, the aurora was visible to about 11 pm local with the moon high in the sky with Jupiter not far behind. I tried some quick listening, but the hum level made that worthless. The auroral display was somewhat static, with patches of red moving very slowly to the west as the evening progressed with occasional streamers coming and going. I went out to my quiet site on the morning of the 6th hoping to hear some chorus, but only heard increased hiss.

Your Much Appreciated Correspondence

•**Shawn Korgan, Gilcrest, Colorado (VLFKorgan@aol.com)** There were around 1000 meteors falling per hour last night at the peak of the shower. I stood out and tried to hear some of the louder ones but never heard anything verifiable. Twice I thought I audibly heard a meteor but I cannot prove it. If I did, it was a very faint crackling sound similar to static electricity. It was a fun night of watching. The VLF whistlers took on a unique sound that could remind any one of meteors zipping through the sky and then disappearing but were all strictly lightning generated events that I'm aware of.

WWV was super strong on 2.5 and 5.0 MHz. Even though I was only 120 miles or so from the transmitter, I do not recall ever hearing it this strong before (except at the towers themselves!)

There were plenty of meteors to be heard on the FM band as well as they reflected distant FM radio stations from all across the country.

I did not hear any meteor related activity in the VLF band that I'm currently aware of. I will review my tapes a little further. There were some odd sounding events though!

Hope you caught some of the action! I was enjoying listening to the meteors on the TV picture carrier frequency of 61.25 MHz before leaving to tape for the INSPIRE sessions. I was listening to VLF from 11:00-14:00 UT.

• **Michael Mideke, WB6EER, Magdalena, NM (mideke@gilanet.com)** November 17 - I found a fairly decent site at the intersection of US 60 and NM 52, which is the road to the VLA. The power lines are at about 3 miles, so there is plenty of hum. On the other hand, I can drive there in 40 minutes, find the spot in the dark, set up quickly and do my thing.

When I was setting up around 1145 there were lots of clustered short whistlers following strong sferic bursts. There seemed to be traces of intermittent hiss and possibly chorus traces. By 1200 the whistler activity had become more sparse and the whistlers seemed to be longer. Most or all of the whistlers were preceded by strong, crisp sferics. Most of the whistlers were of medium strength, with a minority of weak to very weak whistlers. Whistler activity progressively dwindled through the morning and the hiss/chorus activity disappeared, but around 1355 there was an intense sferic

cluster was followed by a strong, very hissy whistler which produced a train of several echoes - at least 4 or 5. This event was not recorded.

Closer listening reveals another whole layer of long diffuse whistlers, mostly not noted in this initial report.

Local conditions were freezing groundfog - my antenna and cables were coated in ice when I took them down. Two long meteor trails observed to the west just before I hit the fog a few miles from the site.

November 18 - Whistler activity was disappointing but the Leonids were magnificent. As I drove down the canyon into the village of Magdalena at 3:30 AM (MST), the sky was crisscrossed with clusters of meteor trails. I drove west to the Plains of San Augustin to an all-sky show accompanied by meteor burst propagation on the FM radio. Every now and then there seemed to be direct correlation between the appearance of a bright streak in the sky and the sudden emergence of a few words or syllables or a bit of music on the radio.

Arriving at my site, I found the sky nearly clear, full of bright stars and meteorotic lines running every which way. Albuquerque, a hundred miles to the NE, exhibited a low, modest sky glow. Otherwise, the horizon was dark. I did not notice any fireballs but several times the landscape was brightly but briefly illuminated. Visible meteor activity persisted well into the time when the sky had turned blue. At one point, the meteor scatter brought me a good hunk of NPR from St. Louis. Back home, occasional bursts of enhanced FM propagation were still appearing when I turned my radio off around 11 AM.

Natural Radio Log

Month Day	Time UTC	What Heard (whistlers/hour where applicable)	ID Grid Sq.
11/06	1415-1430	Sferics and hiss	MK-EN52
11/17	1200-1206	Whistlers, 2 or 3 per minute	MM-DN42
	1300-1306	Several weak whistlers	MM-DN42
	1400-1406	One weak whistler	MM-DN42
11/18	1200-1206	Short weak whistlers	MM-DN42
	1300-1306	Possible Faint Chorus	MM-DN42
	1400-1406	nil	MM-DN42

MK - Mark Karney, N9JWF, Barrington, IL. Equipment - WR-3, LF Engineering loop, homebrew receiver with 60” whip and -24db/octave hi-pass active filter, 350 Hz. cutoff. (EN52)

MM - Michael Mideke, Benson, WB6EER, Magdalena, NM (mideke@gilanet.com) Equipment – Homebrew receiver with one and two meter whips. Sony MiniDisk recorder (DN42)