

Notes From the Field

Communications from INTMINS Participants

Edited by Bill Pine
Chaffey High School
Ontario, CA

Data submissions are often accompanied by notes and messages from INTMINS participants describing various aspects of their experiences as observers. As an ongoing feature, some of these communications will be summarized in *The INSPIRE Journal*. The following summaries are in the approximate order in which the data was received by INSPIRE. In addition, some communications will be included from INSPIRE participants who did not record and submit data.

Team 1

Jack Lamb

Belton, TX

Jack continues his record of being the most faithful INSPIRE observer. His record dates back unbroken to the SEPAC missions of 1992.

Team 31

Lee Benson

Indianapolis, IN

I am new to INSPIRE and it appears I have just finished my radio in time to see the demise of MIR. Maybe they will get some money because I really need another chance.

My latest antenna was not quite ready yet. It is based on the design by Will Payne at www.altair.org. I would have been ready but got confused with all of the different AD620 amplifiers. I have the copper octoloop finished but didn't get the wire pulled in time for these INSPIRE passes. I was researching Schumann Resonance and found Will's WWW page which first lead me to INSPIRE.

Do you know of any professional sites, like NASA, that have looked at these passes? If so, are their results available anywhere? [I don't know of any other observers. - ed.]

General Comments:

Based on earlier recordings today [4/25], I decided to go with the shielded loop because it sounded on the phones like there was less hum. I had never seen the output from the loop on the spectrogram so I really didn't know what I was getting. I switched to the wire for the last two minutes just for the comparison.

I obviously have more hardware work to do on my loop. I didn't get much time to tune it and had not intended to use it at all for this pass. I have an air capacitor and a transformer that will eventually tune it, but I just had the first components I found in the junk box attached to experiment with. When I got there, the site had more noise than I thought and I decided that the loop was the best of bad choices. I switched to the normal wire at 1744 just to make sure that I had a variety of signals, even if they had hum. The first day I scouted this site it had rained the night before and it now appears that the site appeared quieter on 4/24 than it turned out to be on 4/25. There was also bleed-thru of signal on the WWV radio even with the switch off. I could not hear that in the phones. The "wind" sounds were associated with the local wind rather than the

solar wind because I could feel and hear the gusts. I assume it came from the antenna wire vibrating but I could not eliminate it during this time.

I was not at all happy with the results of this trip but this was the best I could do at the time with what I had.

Team 27 The Amigos San Antonio, TX

Ron Janetzke and Mike Miller make up this team.

Team 7 Dean Knight Sonoma, CA Sonoma Valley High School

Dean and his students set up 3 RS4 receivers with different antenna arrangements and different recorders. Receiver "RS" uses a Radio Shack CCR-81 recorder and a 91 foot long wire antenna oriented East-West. Receiver "#62" uses a Bell and Howell Model 3185-A recorder and a 198 foot long wire antenna oriented North-South. Receiver "#65" also uses a Bell and Howell Model 3185-A recorder and a 145 foot long wire antenna oriented East-West. Sonoma Valley High School Team members are indicated below.

	17-6	18-6	24-5	25-10		17-6	18-6	24-5	25-10
Loni Adams		x			Joel Kuschner	x	x		
Michelle Bertrand			x	x	Austin Love	x			
Meitra Bozorgzadegan	x	x	x	x	Scott Mathison	x	x	x	
Robin Brown-Ward	x	x	x	x	Abrie Maze		x		x
Ben Casias		x	x	x	Anna Neubacher	x	x		
Amelia Dang	x	x	x	x	Laura Neves	x	x		x
Ariana Du Floth	x	x	x		Tevor Nuccio				x
Spencer Falor-Ward	x	x	x	x	Stuart Price			x	x
Courtney Geissinger	x	x			Cooper Quintin				x
Dana Gillespie	x				Michelle Riggs			x	x
Nathan Goddard	x		x		Tom Sanders		x	x	
Annika Gustafsson	x	x	x	x	Christine Schneider	x	x	x	x
Nicole Hatley	x	x	x	x	Josue Solis	x	x		x
Ty Horner	x			x	Megan Spence	x	x		
Kendall Jarvis			x		Casey Stober	x	x	x	x
Stephanie Jensen	x		x		Meghan Sullivan	x	x		
Sarah Kay	x	x	x	x	Abby Swann		x		
Julliane Krauss		x			Jared Traub	x	x		x

Notes from the data analyst:

A Whistler Sampler from 4/24

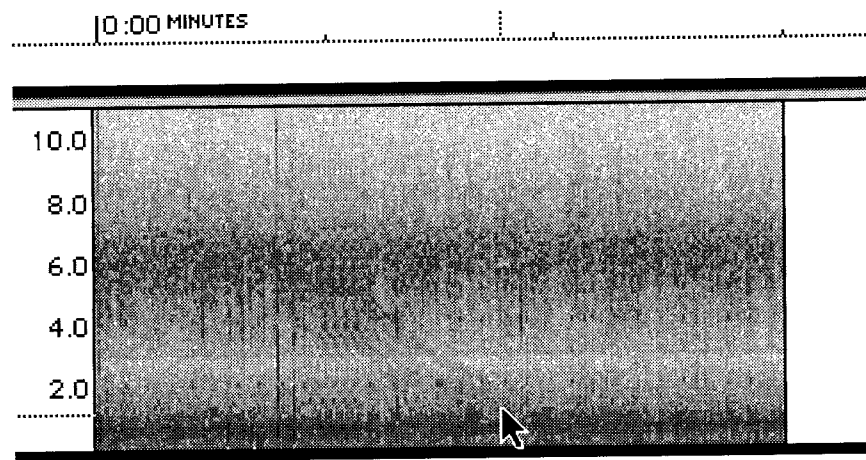
There were many great whistlers on the tapes. I picked out four of the strongest from the RS tape and tried to find them on the other tapes for comparison. The 62 tape had much more manmade interference (LORAN and hum), but the whistlers boomed through! If I had looked first on this tape, I would have been hard pressed to pick a small number of good ones. The 65 tape showed much less sensitivity, but also less hum and no LORAN. Could be because of the orientation of

the long wire. One of the whistlers did not show up on the spectrogram. The whistlers chosen were:

W #1	1344:19 UT
W #2	1345:55 UT
W #3	1347:41 UT
W #4	1351:11 UT

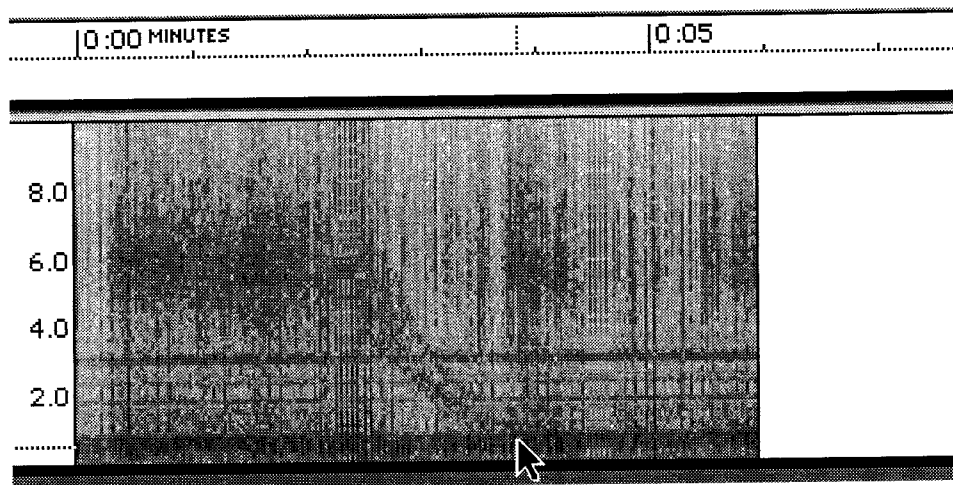
None of these whistlers was very strong in Southern California.

RECEIVER 64 (RS)



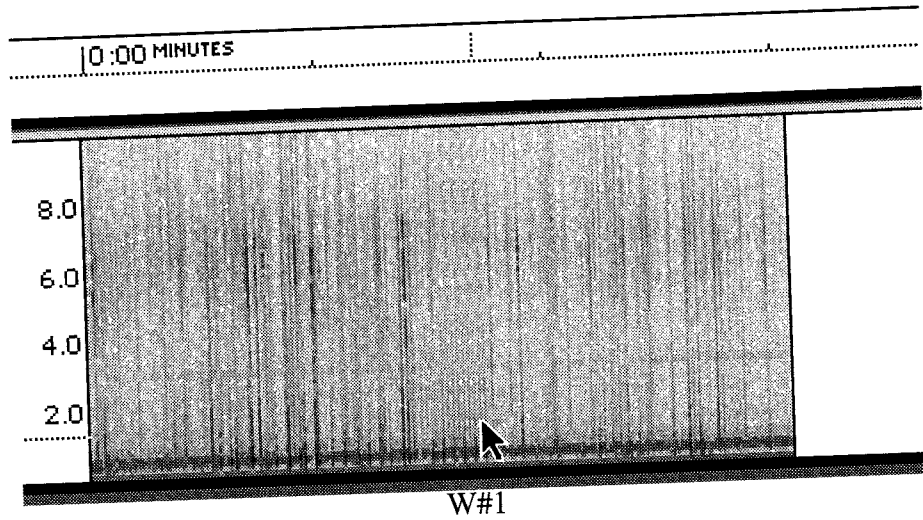
Arrow points to the bottom of a breathy whistler at 1344:19. (W#1)

RECEIVER #62



W#1 (0-10 kHz)

RECEIVER #65

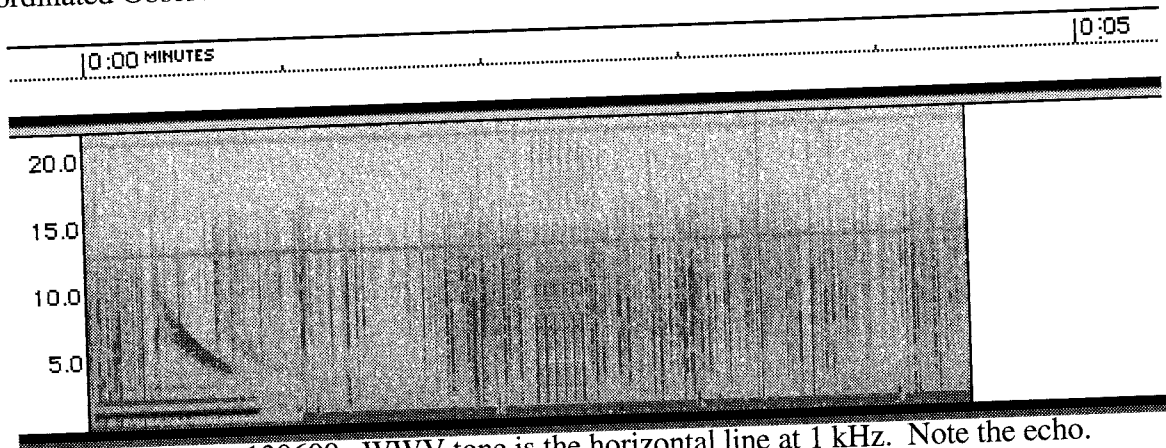


Team 32

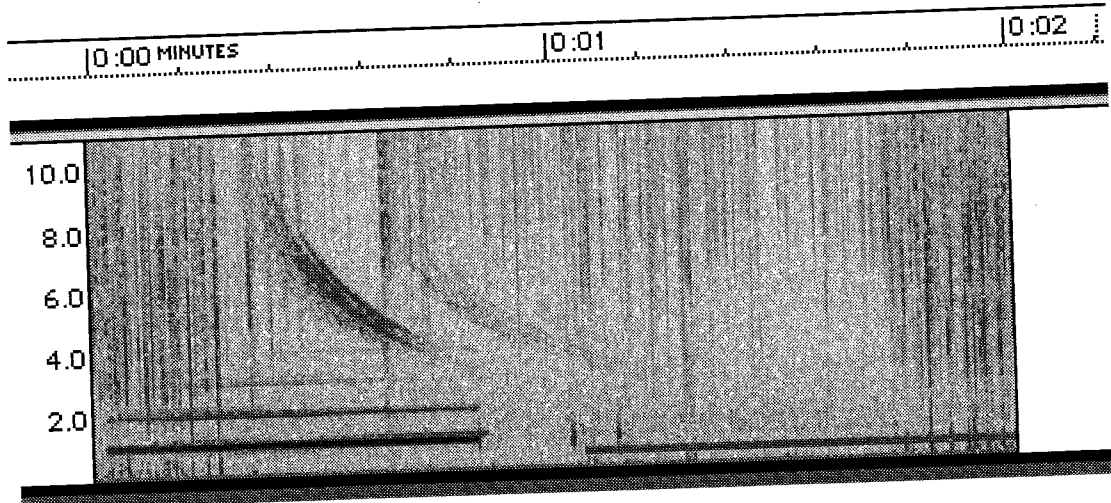
Shawn Korgan

Gilcrest, CO

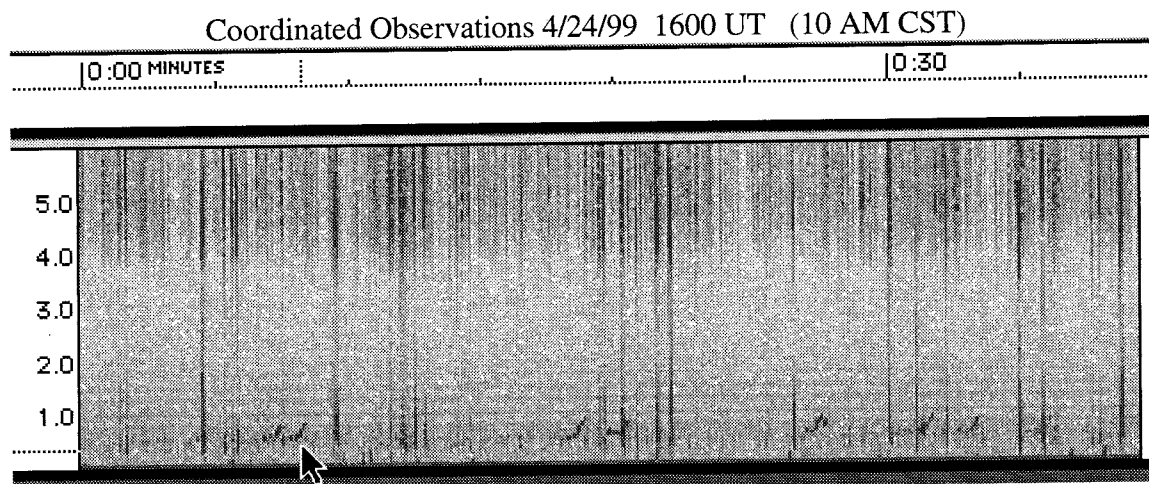
Shawn really got into the whistlers in April! One of the best occurred during the Coordinated Observations session on 4/24 at 6 AM MDT (1300 UT) at the 1306 UT time mark.



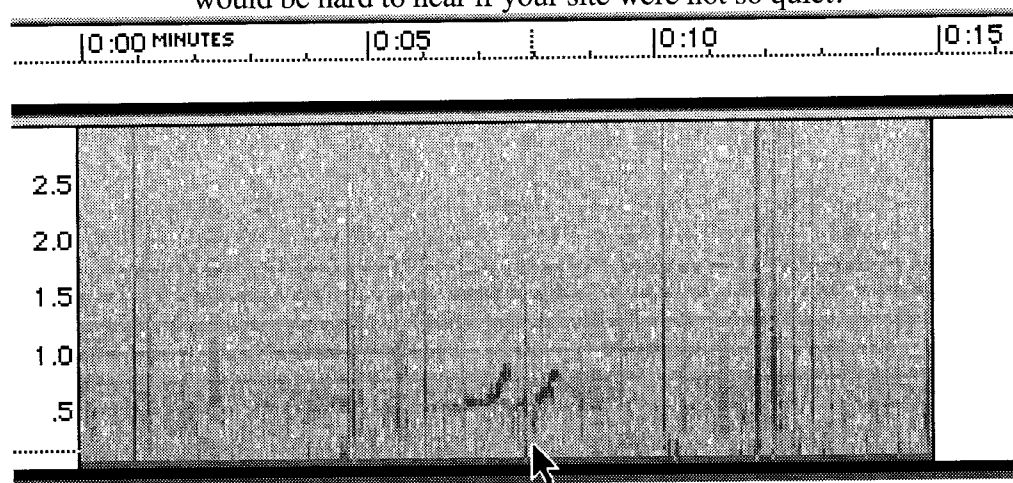
Whistler at 130600. WWV tone is the horizontal line at 1 kHz. Note the echo.



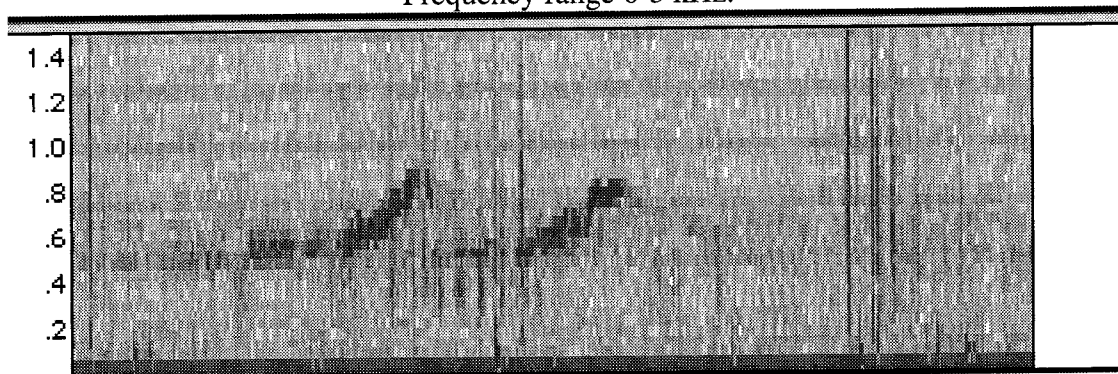
Linden and Teammate Brian Cowan recorded several whistlers during their sessions, but what they got that was unique was a lot of chorus complete with rising tones (risers). they also noticed a difference among the risers with some being quick (which they dubbed “whoopers”) and the longer lasting risers. The following show samples and illustrate the differences.



This is 40 seconds starting at 160420 UT. The arrow points to a pair of whoopers, but many others show up during this interval. Whoopers last about .5 seconds. They reside below 1 kHz and would be hard to hear if your site were not so quiet!

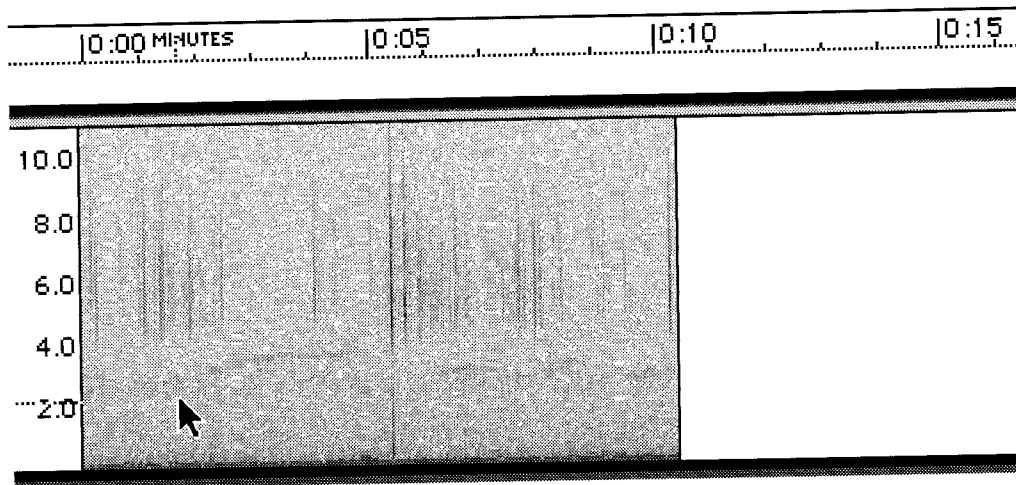
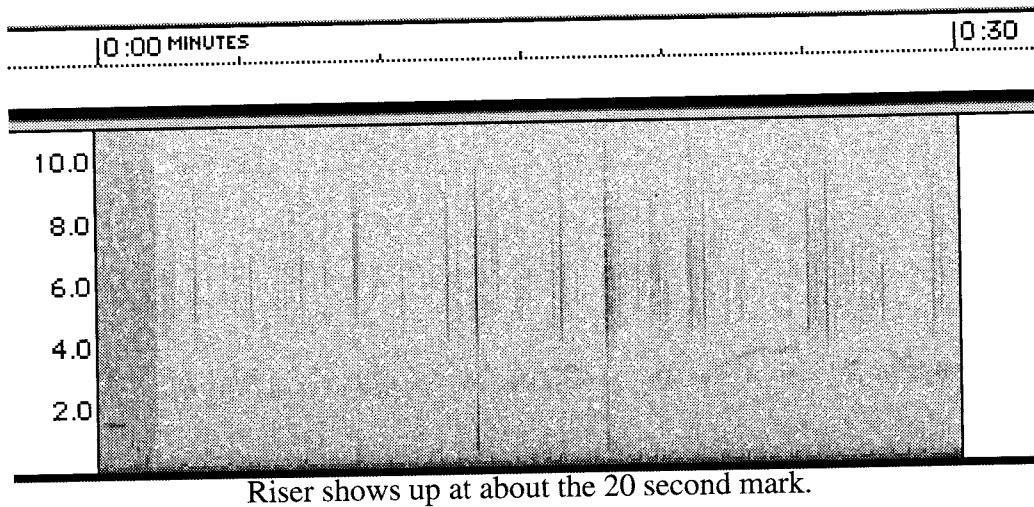


Frequency range 0-3 kHz.

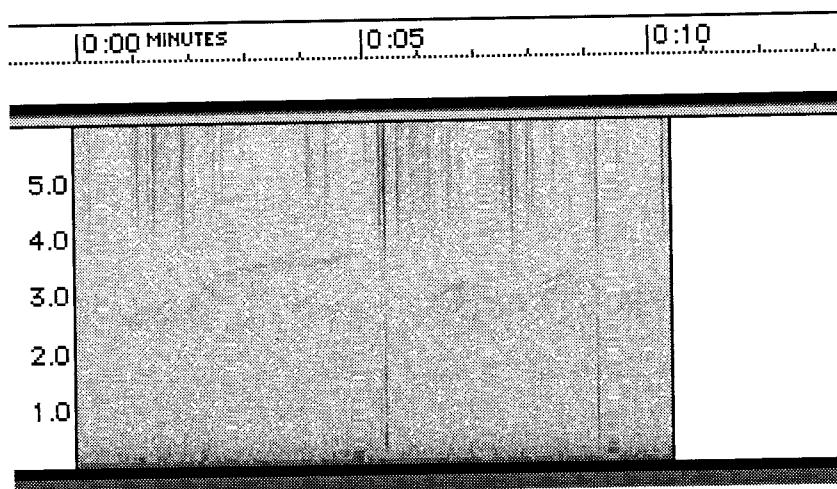


Extreme closeup using 0-1500 Hz range. Very neat!

Coordinated Observations 4/25/99 1500 UT (9 AM CST)



This is the last 10 seconds of the previous spectrogram. The arrow points to one of several risers. Notice that this is at a higher frequency than the whoopers. Notice also that these are longer and more drawn out.



Team 21

Phil Hartzell

Aurora, NE

Date: 4/25/99

Hello Dedicated Inspire Participants:

A few notes on my recording sessions. First and foremost, this was the first session I had where I did not have one solitary thought on Omega. Maybe I am finally getting over the fact that the old venerable girl is gone and time heals all wounds. Seriously, I like the fact that I don't have her in the background to distract me when I am recording.

I had the chance to record sessions 24-4 and 24-8. The 24-4 session ^{WENT} ~~was~~ very well. My loop performed wonderfully, nulling the sometimes overpowering ac hum very well. The central area of the midwest had many strong to severe thunderstorms to my south. This resulted in many sferics, recorded as a nearly constant barrage. With the sheer number of sferics heard, came an equal number of whistlers. Most of my whistlers were about the same signal strength as the sferics. Quite a few did rise above the background level or they came through during the short breaks between crashes. I do believe I have recorded some of my loudest whistlers with this loop. I like it better than the long wire and my whip.

My 24-8 started out on a weird note. I drove up to my usual spot above the pond, back behind the trees in my little whistler spot. I've did it hundreds of times. I climbed out and noticed some voices coming from the pond. (it's not really a pond, more of an irrigation mudhole!). I walked down through the trees about 500 feet and noticed about a hundred people gathered around having a wedding! I was surprised because I see very few people in the area. I was concerned that the ignition noise would be present if people began to leave. They must drive around a corner and cars get within a couple hundred feet of me.

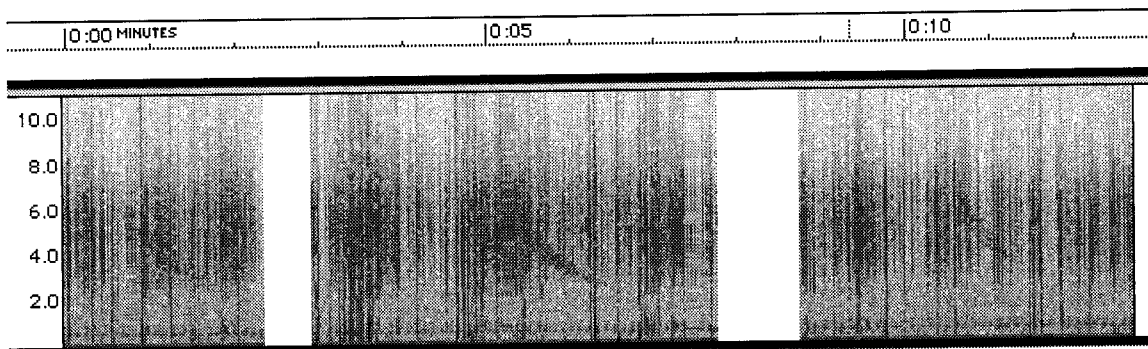
Well, a few did leave at about T-time, and I recorded everyone of them. The session was very uneventful anyway, I may have had a few whistlers but nothing to great. No signal from Mir. I did have fun listening to the different sounds various cars have from the ignition systems. The smaller the engine or car, the higher pitched the ignition whine. The loudest and lowest pitch was a midsize Buick LeSabre of about mid- 80's vintage. Probably had a small V-8. I noticed when I walked down the hill during setup, that I could see a half-dozen vintage 1930's to 50's Harley motorcycles in the group. I sure wish one of them would have drove by during the session. I wonder what ignition sound they would create. Thanks! See what the fall brings!

Happy Whistling.

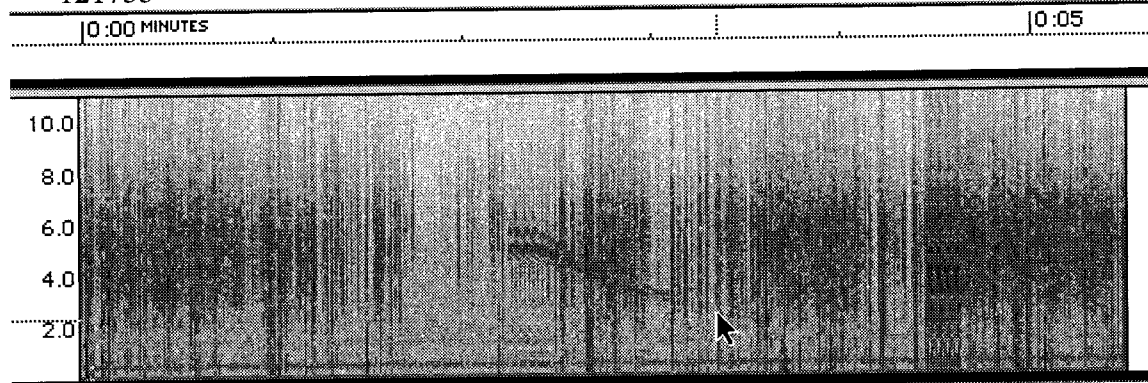
- Phil

Phil got several whistlers and a couple of samples are shown here.

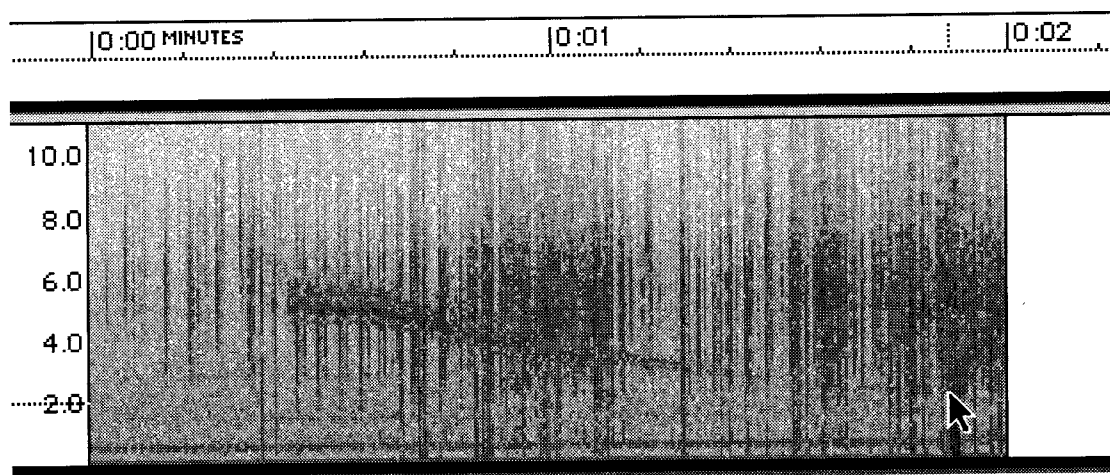
**4/24/99 Operation 24-4 1226 UT
(Whistlers prior to operation)**



Three whistlers (of many) - these are the ones you boxed in your log.
121733 121818 121942



This is the one logged at 123423 as Very Strong and Very Loud. It is!



Closeup shows the dispersion extending from above 8 kHz down almost to 2 kHz.

Team 16**Leonard Marraccini****Finleyville, PA**

Enclosed with this brief letter are two tape cassettes and log sheets for operations 18-4 and 18-8. I hesitated sending these to you due to "Murphy's Law" which occurred during that day. I had gone to my favorite location to tape the 18-4 operation. This site is located in a county park where a pleasant stream runs through a quiet, open valley. I FORGOT that April 18 was the second day of opening trout fishing season here in Pennsylvania! I had to contend with HORDES of trout fishermen, etc. As a consequence, the first 9 minutes of tape included instrumentation problems - feedback squeal from a Realistic mini speaker/amp and a bad connection between the RS-4 and the tape recorder resulting in a dead data link. The remainder of the tape was acceptable.

As a result of my "Murphy's Law" morning, I decided to change location for the taping of operation 18-8. I moved to an isolated hilltop, still in the park but remote from the trout stream and fishermen. Peace and quiet finally. However, at this site I received electrical interference (hum) from some unknown source. this is evident throughout the tape session.

Thus both tape recordings I consider as below standard! I hope something can be salvages.

Team 29**Janet Lowry****Houston, TX**

There was much more activity than I've heard before, and I'm wondering if it's all in the category of 'sferics' or if you hear other kinds of sounds. During some of the recording time I heard sounds that sounded almost like a sweet, sucking sound. then there were sounds more like crashing through dry brush. Perhaps it's just my aural imagination that tries to categorize each in a different way.

[Sferics is a general term for natural VLF and also refers specifically to the sharp crackling of lightning (dry brush?). Other sounds do occur and are classified by how they sound to the observer: tweeks, whistlers, chorus, risers, whoops, etc. There is little standardization to most of this, so observers are free to give descriptive names to what they hear! - ed.]

I'm really enjoying this and am looking forward to both learning and recording more. I've just bought a folding kayak, and if I can ever figure out how to assemble it I'm hoping to use it as a way to reach some quiet recording spots.

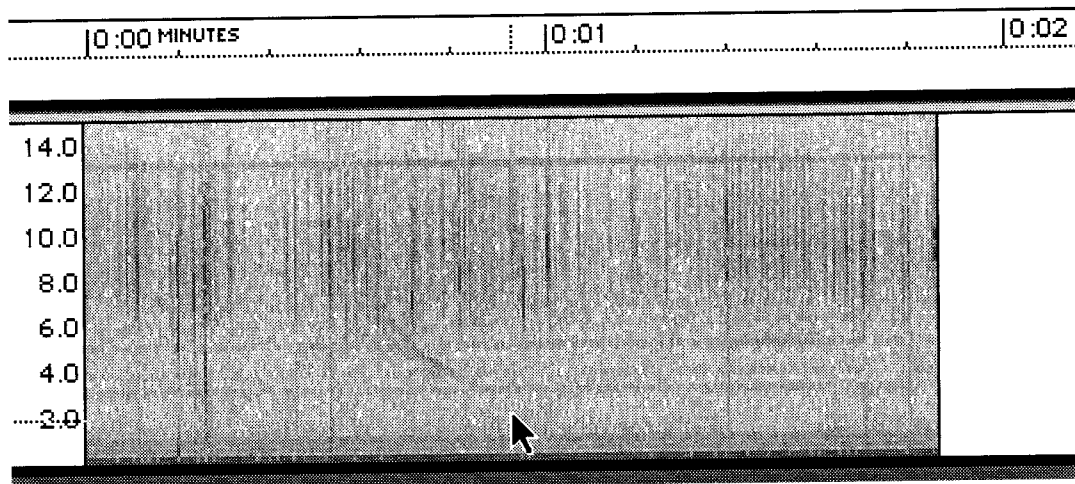
Team 7**Kent Gardner****Fullerton, CA**

I discovered something that may be useful in putting time marks on the tapes and eventually on the printouts. While recording some MIR passes, I noticed that when I put my quartz sweep second hand watch close to the receiver, the tick-tick could be heard through the earphone/speaker. When printed out they produced clean time marks, the first being slightly longer in length, then it would repeat. Such marks could be used for a second by second visual indicator, probably without masking or destroying potential data impressions. It was fun experimenting with it anyway. I also got some interesting recordings of internal oscillations of my digital voltmeter.

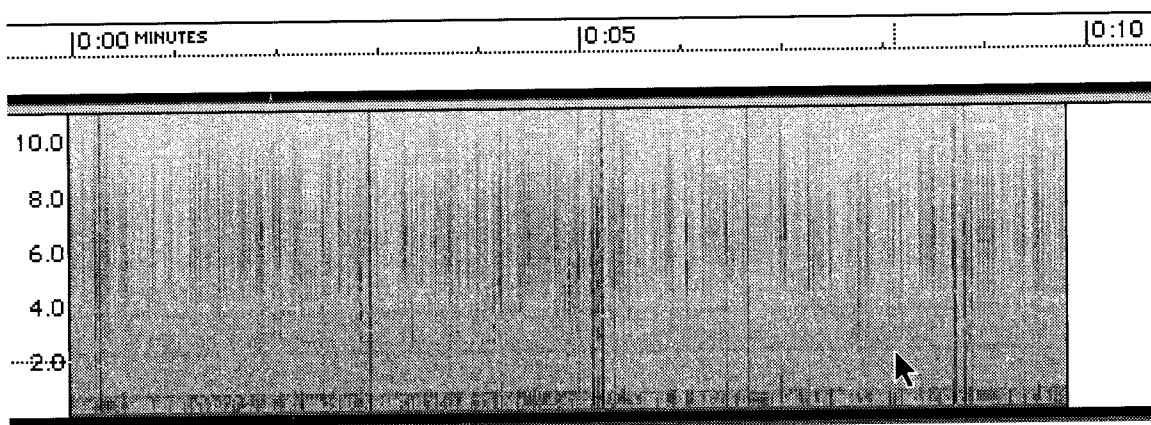
Team 6**Bill Pine
Chaffey High School****Ontario, CA**

The Chaffey High School INSPIRE team set up three receivers for observations at our site on Glendora Ridge Road in the San Gabriel Mountains overlooking our valley. Annually, there is a sort of competition to see who can hear the first whistler, the most whistlers, the strongest whistler, etc. Last year we got through the entire fall with no whistlers - a first. We hoped for better in the spring. Did we ever get it! We don't know who heard the first one, but everyone who went heard many, many whistlers. The following are some samples.

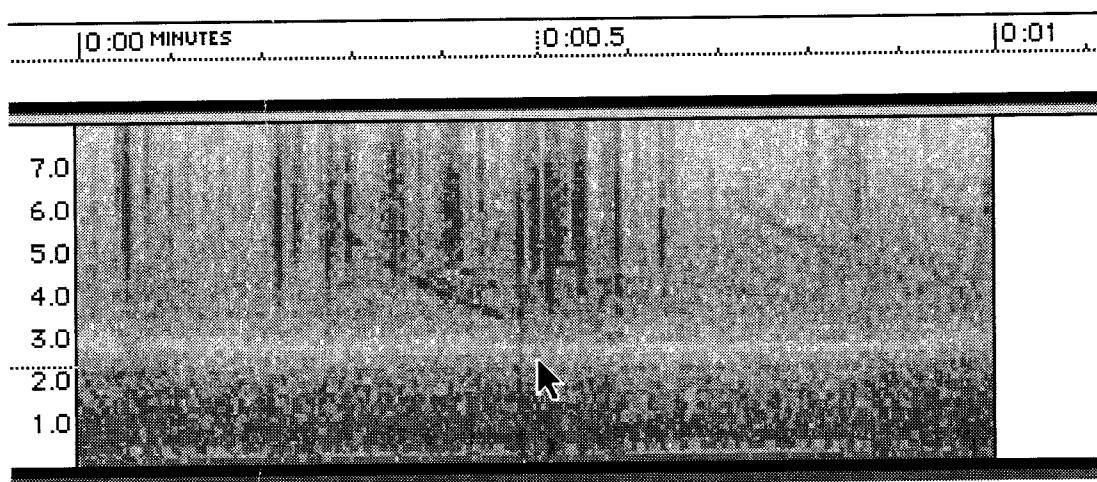
4/17/1999 Erin Hoppe



4/18/1999 140810 UT Minh Diep



4/25/1999 160013 UT Erin Hoppe Receiver #2 (RS-4)



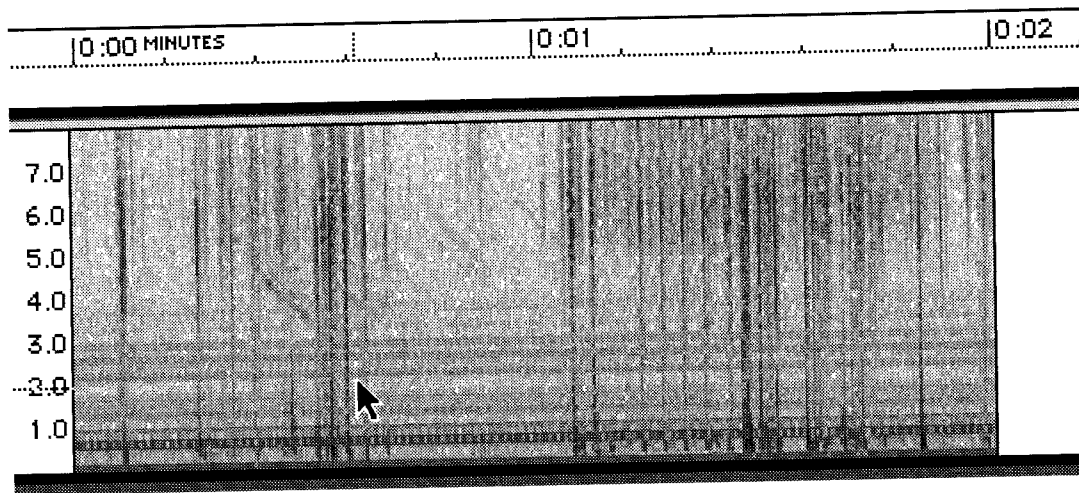
Note the echoes.

4/25/1999

160013 UT

Philip Hirz

Receiver #3 (VLF2)



The same whistler as the previous spectrogram.