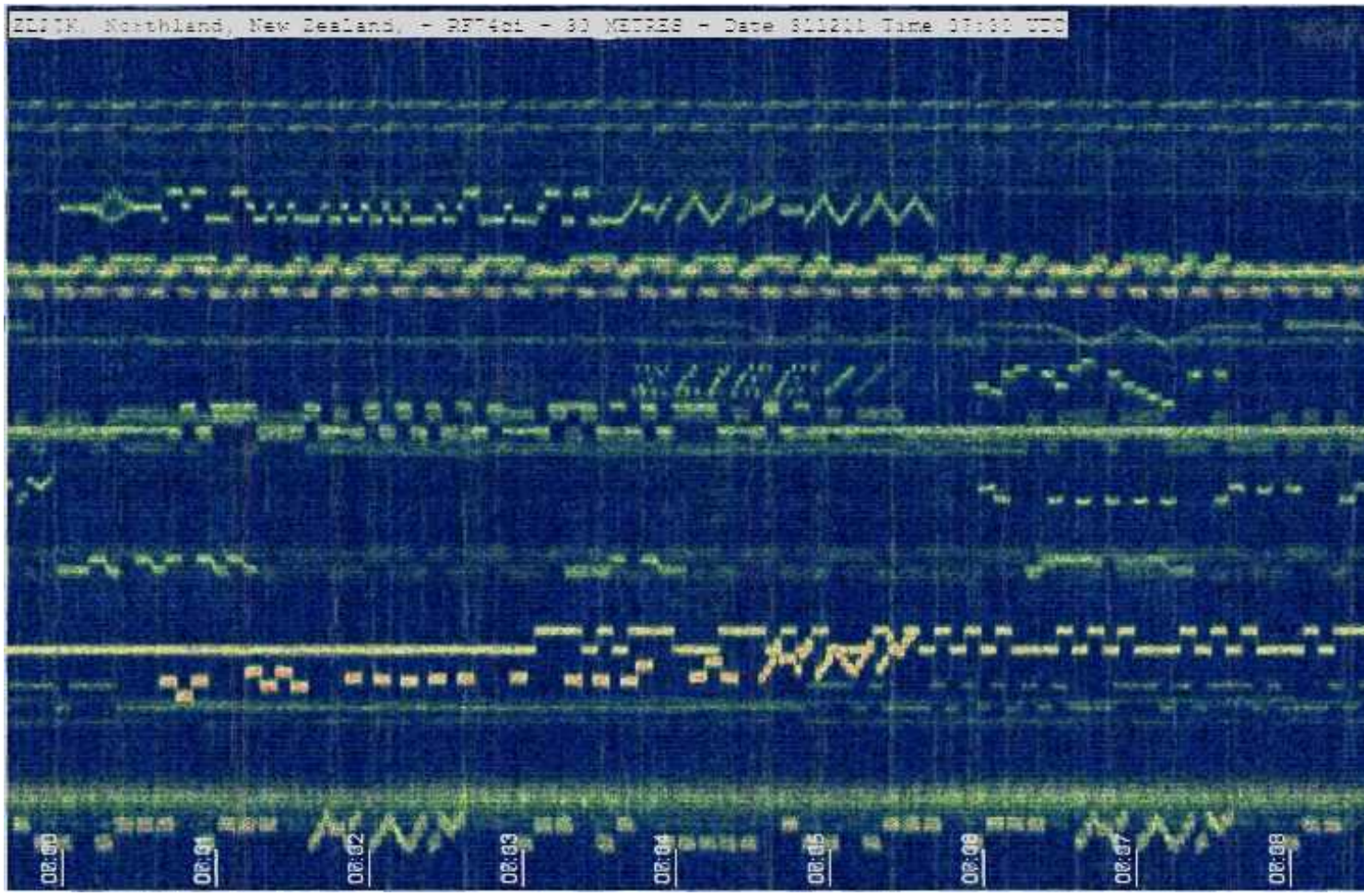
In Las Cruces, New Mexico we are blessed to have a Elmer and mentor that is not afraid to try almost anything that has to do with Ham radio and electronics. Some time, much earlier this year, Dave Hassall, WA5DJJ, started bring small transmitters to our local builders group meetings. He was excited about a new facet of Ham radio broadly described as Manned Experimental Propagation Transmission (MEPT). This is a small group of Hams across the world that have both created low power transmitters and a network of receivers connected by the Internet that are capable of receiving signals in a specific band and giving nearly real-time feed back on signals.



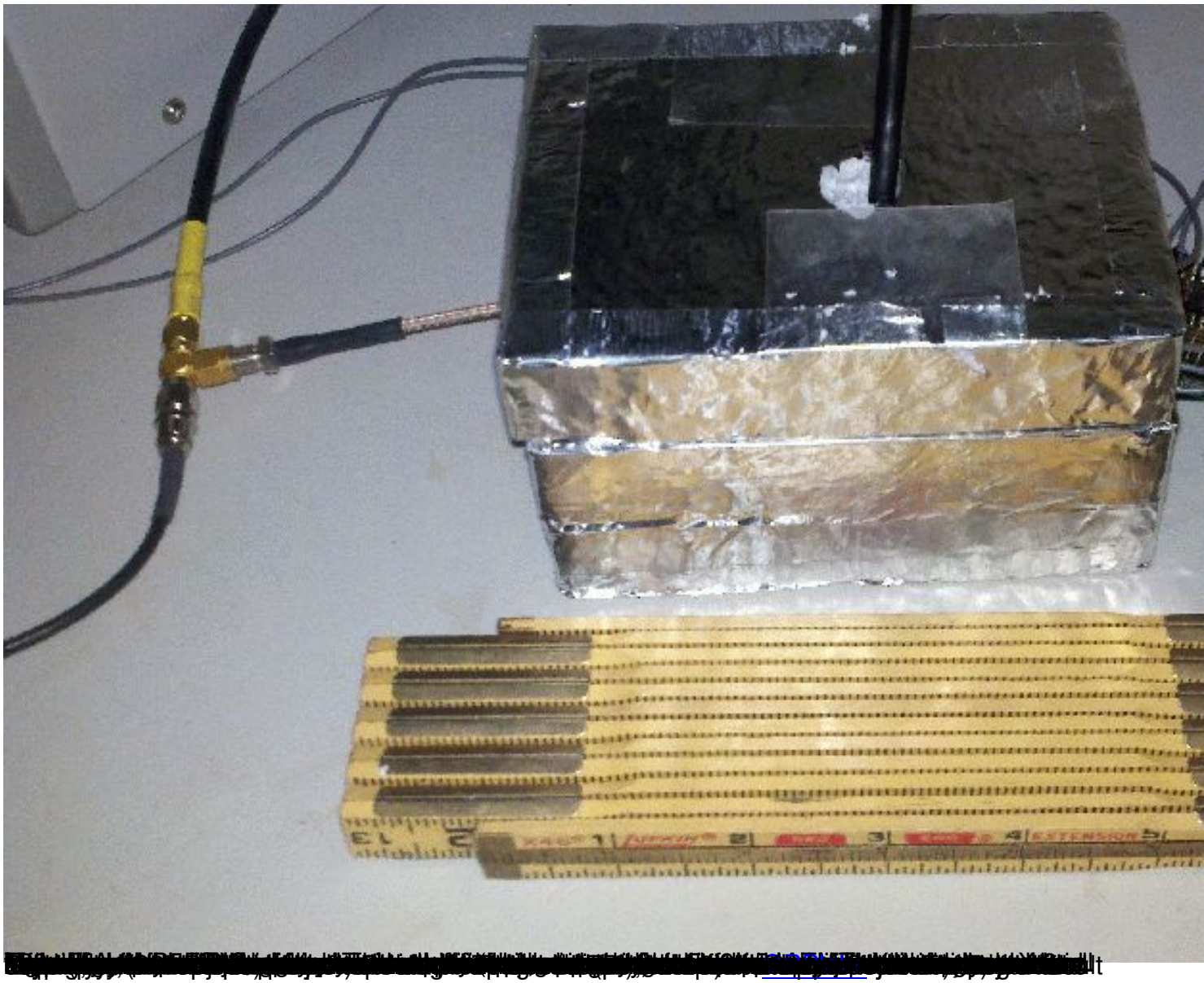
In the screen shot above you can see many signals. Before going further, let me orient you to what you are looking at and point out some features. Along the bottom there are times in hours:minutes format Coordinated Universal Time (or UTC also sometimes called Zulu). In a gray area to the right of the main picture is a frequency scale this is in hertz. At the bottom of the scale is 10139900 (10.139900 MHz) and at the top of the scale is 10140110 (10.140110 MHz). This the entire range of frequency used by MEPT is only 200 Hz in the 30 meter band allocated to Amateur Radio operation. By contrast a voice (phone) signal is about 2400 Hz wide. This narrow bandwidth signal is much of the magic behind MEPT.

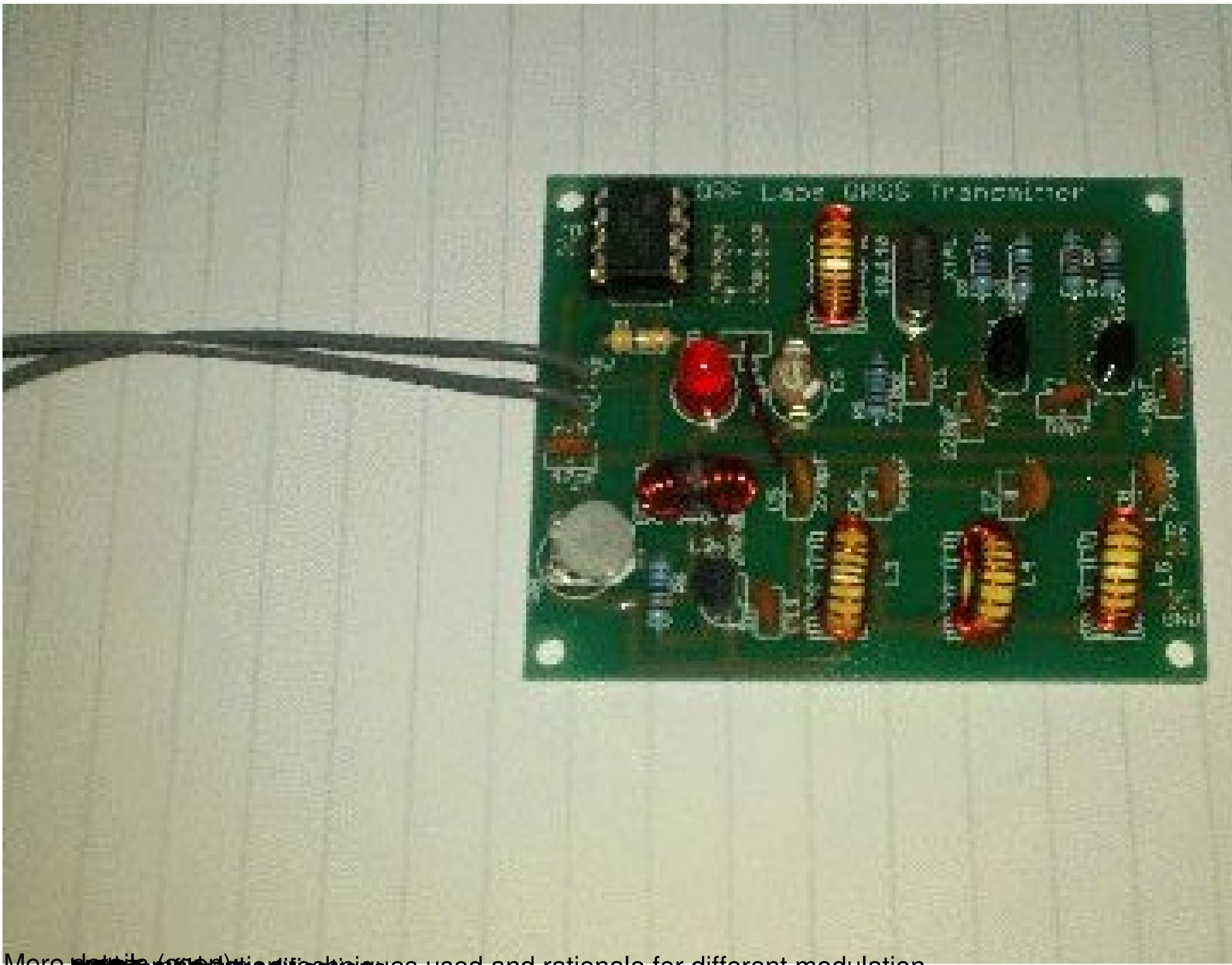
Signals start at the left and with time progress to the right, taking ten minutes to do so. At the end of a ten minute period the screen shot is automatically published on the internet. In addition it is possible to stack screen shots and photographically add (integrate) them to pull weak signals out of the noise, that has been done above. The time frame is 0550UTC to 0810UTC or 140 minutes of signals. Some signals which are not well synchronized to the 10 minute window actually get noisier (see the trace near the bottom). I'm proud to say that my signal is as bright and clear as any signal. I am between 10139950 and 10139960 and the bright signal just below is a good friend Richard, KC5EVR.

This picture was made by Pete Mulhare, ZL2iK , who runs the grabber in Ruatangata, New Zealand.

KE5OFK*, WB5UEW*,P29ZL(KD5SSF)*, KC7VHS*, W1BW (the Flying W), ZL1EE, K5DLA*, NM7J(HS0ZHB)*, WE4DX, N5BL*, G0PKT, WB5FKC, KD5SSJ *, KC5VR*, N5CWW*, K7TP, WA5DJJ
* Call signs marked with a * are associated with the Las Cruces group. That's a pretty good showing 11 of 15. For the Hams actually located in Las Cruces, NM (DM62) that at is a one way trip of at least 6935 statute miles (11162 km) to receiver (grabber) located in Ruatangata, New Zealand (RF74ci) . I used a smart phone app called to QTH Locator to calculate the great circle distance.

So what does a mighty transmitter capable of reaching round the world look like.





More [illegible] techniques used and rationale for different modulation,

- [illegible] ware used,