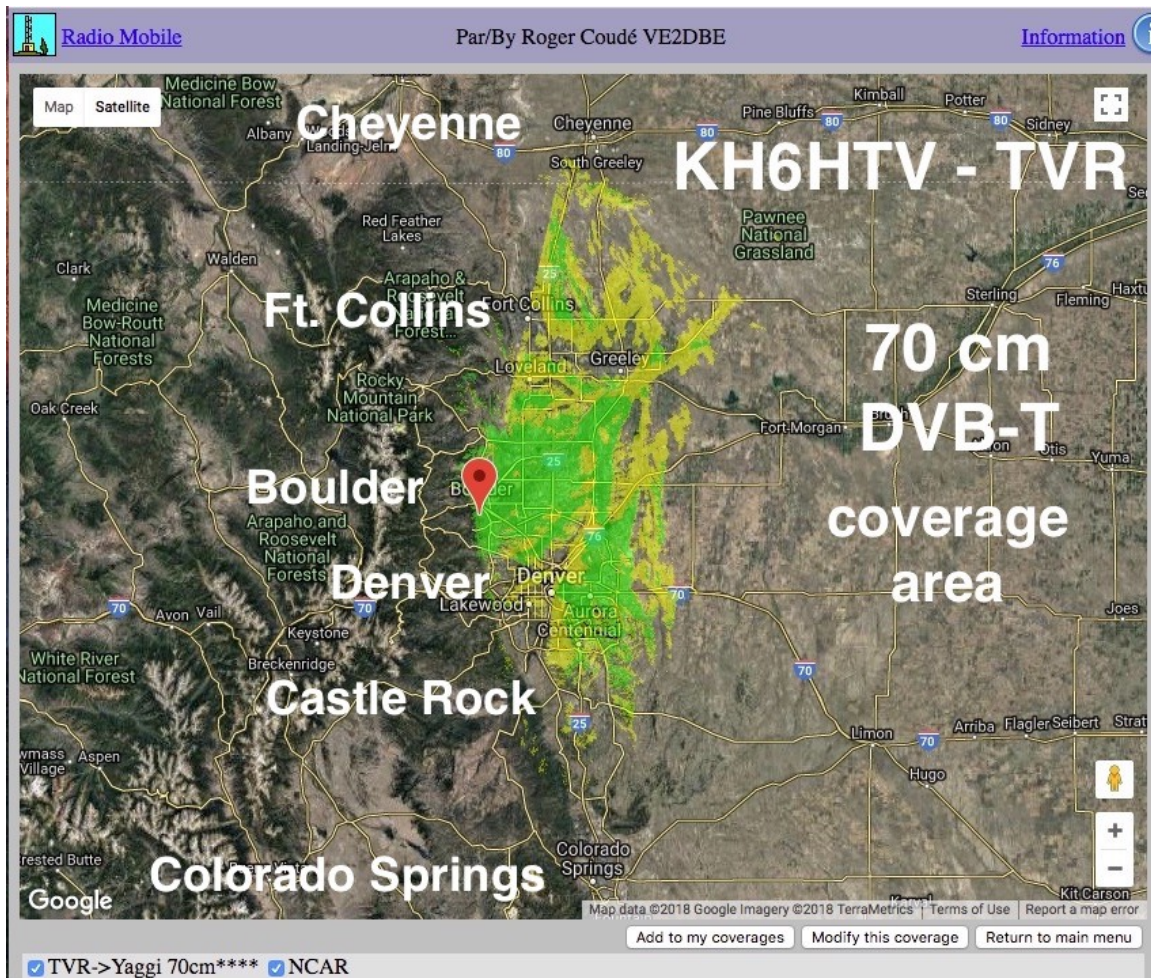


BOULDER TV Repeater's REPEATER

August, 2018



The above map is the predicted coverage area of our TV repeater. This assumes the remote station is using a 6 element (11dBi) yaggi antenna at 30 ft. height. On 70cm, the remote station also needs to be using a 10 watt (rms, avg) DVB-T transmitter. The on-line, RF propagation prediction program called *Radio Mobile* <http://www.ve2dbe.com/rmonline.html> was used to calculate this map. More detailed maps are available at www.kh6htv.com in App. Note AN-43c. Very detailed point-to-point RF path predictions can also be provided upon request.



ATV from Wyoming to Boulder

Jim Andrews, KH6HTV

The Boulder ATV Repeater, from it's new location at NCAR, reaches out a really long distance. Plus the repeater is a true QRP repeater, running only 5 Watts on DTV. On 70cm, it's transmitter shares a common antenna with the BARC 70cm FM voice repeater. Computer predictions said we should be able to reach into southern Wyoming. The computer said a good site to test was just south of Cheyenne on I-25 where there are several microwave towers and also the Cheyenne TV tower. It is 77 air miles from NCAR. On July 19th, Jim, KH6HTV and Don, AA6TV made a DXpedition to Cheyenne to see if in fact they could both receive and transmit into the NCAR repeater. The DXpedition was timed to co-inside with the Thursday afternoon ATV net. The above photo is confirmation that it works ! This photo was taken by Don, N0YE, ATV net control. It was the TV image he saw on his home TV screen after being repeated by our TV repeater. Jim & Don received the 70cm, DTV signal from Boulder on a 6 element yaggi antenna with a 10dB margin. They were also able to transmit a 70cm, 10 watt DTV signal back to the repeater, again with a 10dB margin (exactly as predicted by the computer program, *Radio Mobile*). On 23cm, they used a 3 watt, DVB-T transmitter and a 24 element, loop yaggi. Again,, they had a 10dB margin. The last test was on 23cm with a 30 watt, FM-TV transmitter. They again got a P5 picture into the repeater. Dropping the power down to 1/2 watt degraded the FM picture to P3.

While driving up to Cheyenne, Don and Jim monitored in the car transmissions from the tv repeater. Don, N0YE, had the repeater turned on and transmitting a continuous DVD with "live" video and audio. Driving from Boulder east on Baseline Road and then north on I-25, we were able to verify the good and bad areas as predicted by Radio Mobile.

To maximize the chances of success, the DVB-T digital parameters were set for a lower 720P resolution, QPSK modulation and very aggressive Forward Error Correction of 1/2 Code Rate. These parameters are used on the TV repeater's transmitter and were also used for the Cheyenne transmitter. For more details on these parameters, see my application note, AN-39.

As a side note, the BARC 2 meter (146.70MHz), FM voice repeater was used to communicate between Cheyenne and Boulder. Running 50 watts, mobile, voice communication was far worse than the DTV communication. The audio both ways over DVB-T was perfect CD quality. The FM voice signals were very scratchy and difficult to understand.

NEW HAMs ON ATV --- We welcome, **Bill, K0RZ**, to our Boulder ATV Net. Bill has been a long-time, silent, viewer of the net. As of July, he has finally gotten back on the TV wavelengths. He is now transmitting a 23cm, 3 Watt, FM-TV signal from his qth on Davidson Mesa, just west of Louisville. Bill was formerly on ATV in the mid 70s thru the early 90s. We also welcome **Debbie, WB2DVT**, Pete's wife, who has been watching, and just recently decided to show her lovely face in front of their camera, plus some great travel slide shows of their recent road trip back east.

BOULDER ATV HAMs in their SHACKS

For the past month, DVD recordings have been made of the weekly, Thursday afternoon (3pm) ATV Net. Images of the various Boulder ATV hams were grabbed from these DVDs. Missing are those hams that have not checked into the net in the past month. We will publish their photos soon, we hope. They include: George-N0RUX, Doshia-KB0NAS, Zach-KE0OJO, Steve-WQ0TQG, & Matt-K0DVB



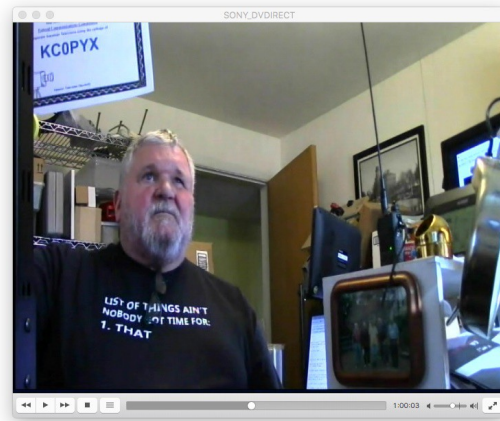
Don - N0YE 70cm & 23cm DVB-T



Jack - K0HEH 70cm & 23cm DVB-T,
VUSB-TV & FM



Colin - WA2YUN 70cm & 23cm DVB-T



Larry - KC0PYX 70cm & 23cm DVB-T



Bill - AB0MY 70cm & 23cm DVB-T & 70cm VUSB-TV



Joe - AD0I 70cm VUSB-TV



Roger - K0IHX & Naomi - KD0PDZ
70cm & 23cm DVB-T & 70cm VUSB-TV



Pete - WB2DVS & Debbie - WB2DVT
70cm DVB-T



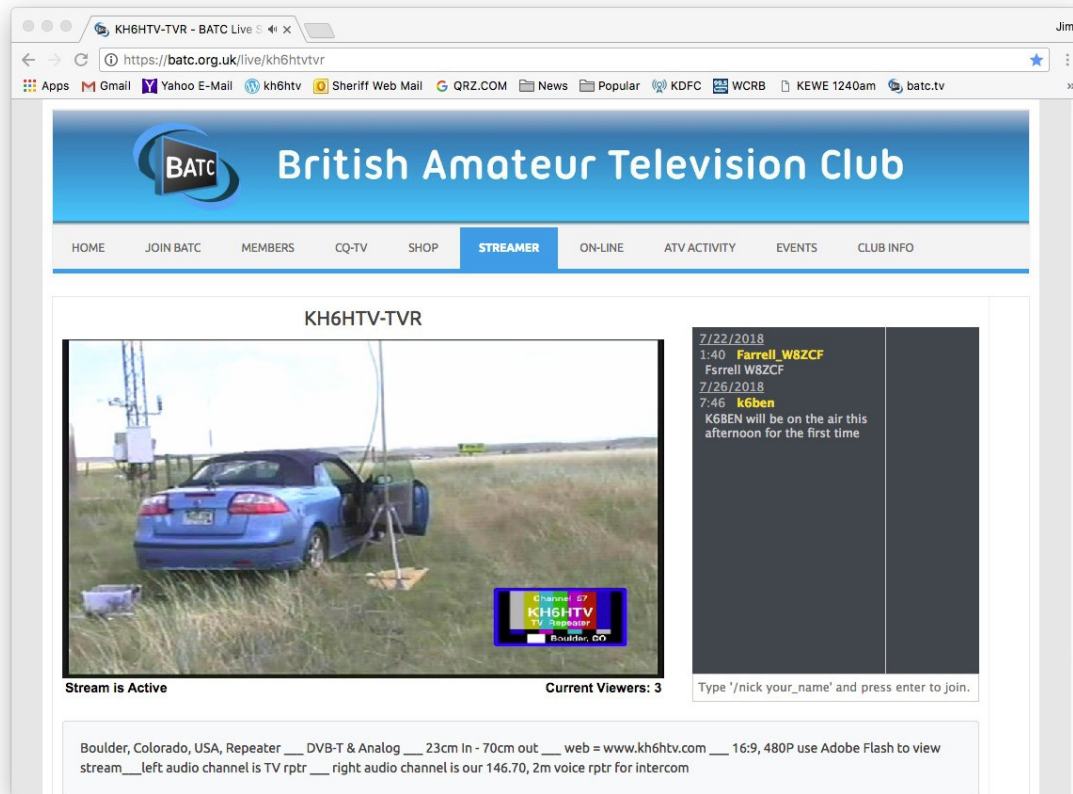
Don - AA6TV 23cm DVB-T



Bill - K0RZ 23cm FM-TV



Jim - KH6HTV 70cm & 23cm DVB-T
70cm VUSB-TV & 23cm FM-TV



BATC VIDEO STREAMING CONTROVERSY

As mentioned in the July issue, we are now able to stream our TV repeater's video live over the internet. Our stream was hosted by the British Amateur TV Club (BATC). The link to our video stream was: <https://batc.org.uk/live/kh6htvtvr> This was seen to be a recruiting tool and a means of interesting other hams to join us on ATV.

Unfortunately, since starting streaming a month ago, I have received objections to the streaming from some of our members. Even to the point of saying they will drop out of our TV group. I do NOT want this to be an issue and break up the TV group. I have thus discontinued the streaming of the TV repeater.