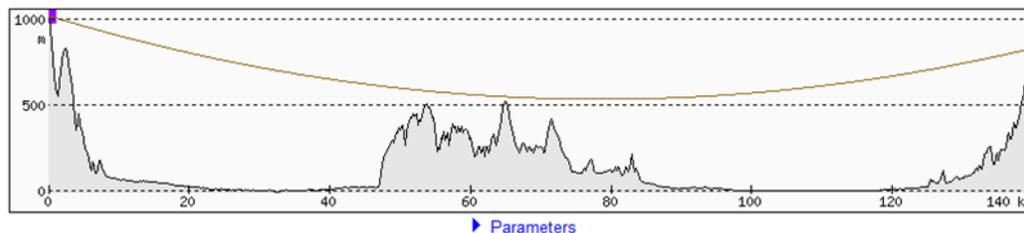


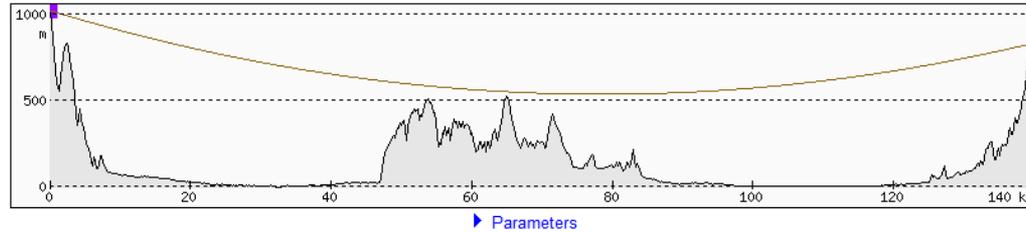
New World Record: 139km on 122 GHz

17 Feb 2020: QSOs between Mike, K6ML, on Mt Vaca (CM88WJ75ON, 835m ASL) and Oliver, KB6BA, (at 1225) & Jim, N9JIM, (at 1250), both on Mt Umunhum (CM97BD18VJ, 1016m ASL)

- WX: Dew Point -11C, Air Temp +15C, path loss \sim 225 dB, atmospheric loss \sim 0.35 dB/km
- Dishes were aligned on 24 GHz (71 dB above the noise) prior to QSY to 122 GHz; we heard signals right away on 122 GHz.
- CW was used, 122 GHz signals were very weak (7 dB above the noise in 22 Hz; -13 in 2500 Hz equivalent) with QSB down to the noise floor.
- We used dual band radios designed by K6ML (using 122 and 24 GHz Silicon Radar sensor chips and 60 cm satellite TV dishes) with somewhat less than half a milliwatt of output power on 122 GHz. Mike & Oliver focused and aligned the radios in previous field tests from 15 to 80 km. Jim suggested the 139 km path from Mt Umunhum to Mt Vaca and also taught us the weak signal EME CW exchange technique.
- <https://www.youtube.com/watch?v=WcMMlcodhJ8&list=PLzE9yPoTsDEF1axUeOiZlI3es8s91V1jo&pp=iAQB> for playlist (5 video clips) of QSO and conditions.



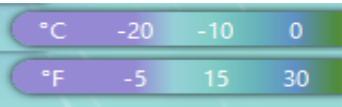
139km on 122 GHz



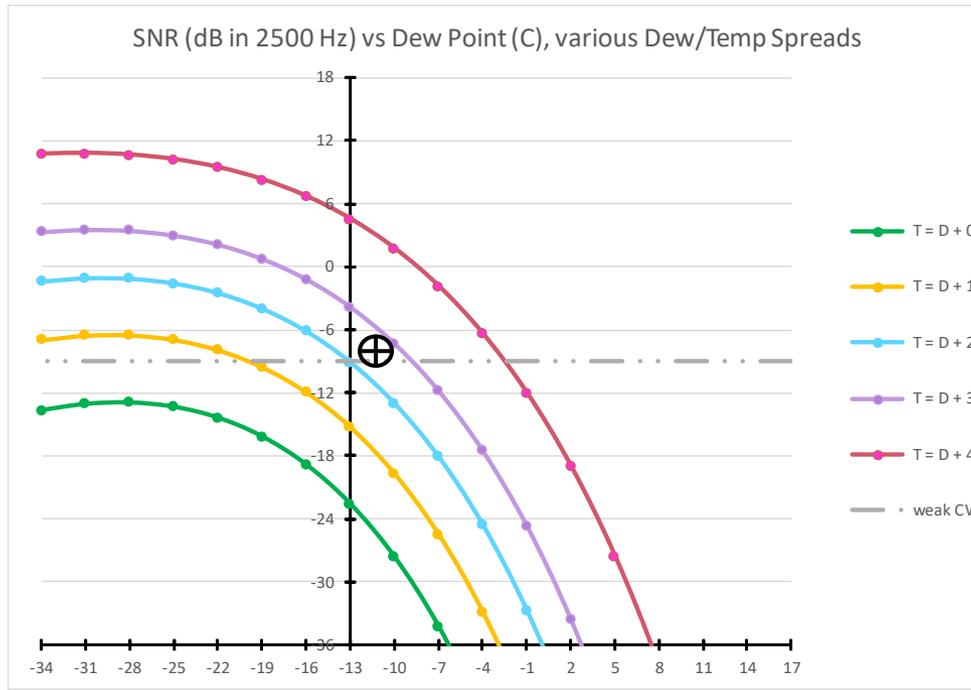
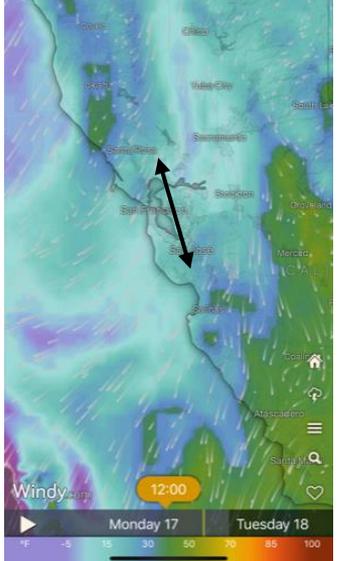
K6ML on Mt Vaca / KB6BA & N9JIM on Mt Umunhum, 2/17/20

-11C dew / +15C air / ~225 dB path loss (includes 8 "S" units atmospheric loss)

+7 dB SNR (22 Hz) / -13 dB SNR (2500 Hz)



Path & dew point forecast @ QSO time



Vaca from Um, note clouds below the path



Umunhum seen from Vaca, foreground ridge/bump is midpath point

