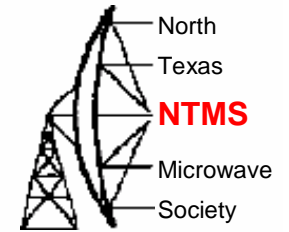


1296 MHz EME Expeditions to the Northeast and Northwest US 2006 and 2007

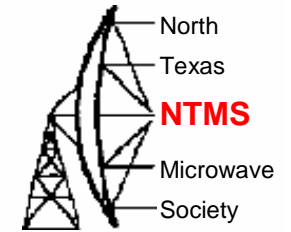
WA5WCP Paul Perryman, W5LUA Al Ward, K5GW Gerald Williamson

Outline of this Presentation



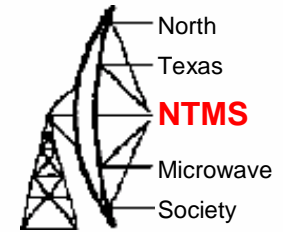
- Introduction and Motivation
- Technical Description
- What is Involved in Setup and Operation
- Locations in New England Aug 2006: RI, Ct, Vt, Mass, and Western US Aug and Sept 2007 : WY, UT, Idaho
- Conclusion and Future Plans

Introduction and Motivation



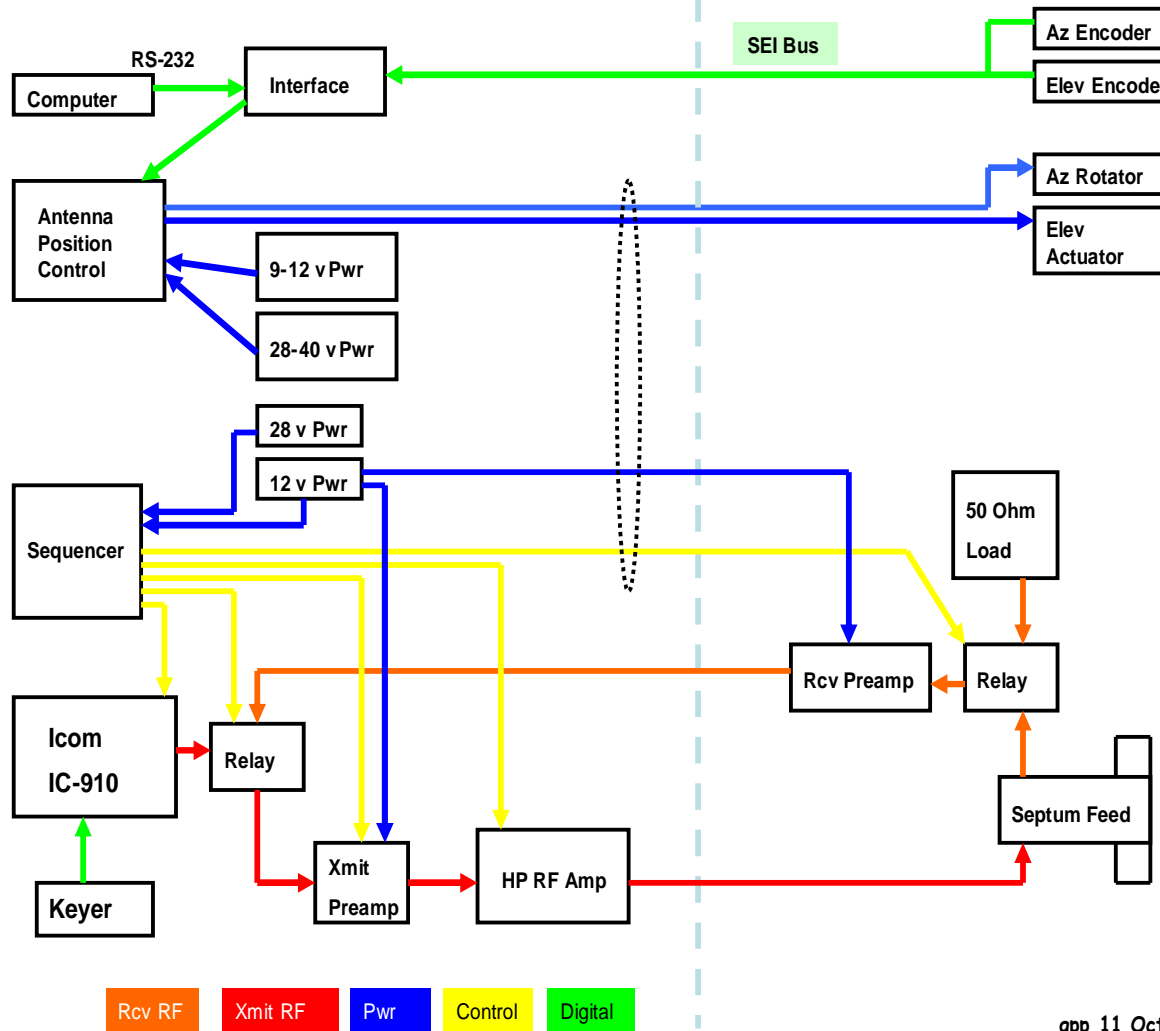
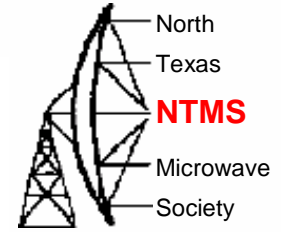
- 1296 MHz WAS had not happened
=> 8 to 10 States that are not “moon active” => 4 in NE, 3 out West, ND, and HI
- 1296 EME is not as difficult as other bands? : What are the Big Challenges?
- A Portable Setup Can be a “One Man” Operation?
- Spring '05 => “Why Not?”

Technical Description



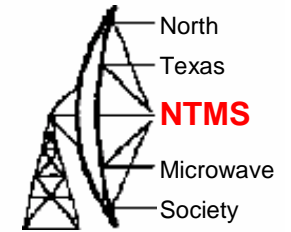
- 1296 MHz Station :
 - 10 ft or 12 ft TVRO 0.4 f/d petal mesh dish
 - What IF Radio?: IC-910 with 1296 module + DEM 30 W Brick
 - HP Amp: WD5AGO 4 X 7289 => 300W, GS15=> 500W
 - Preamp: W7CNK 0.25 nf, low loss relay
 - Tracking: Encoders and K5GW Software
 - Feed: Square Septum with Scalar Ring, Circular VE4MA
 - Dish Mount: Az / El : Yeasu Az, TVRO El Actuator
 - Keying and Logging – K5GW Software
 - 17ft Four Wheel Trailer
 - Integrate it all : 7000 + Miles, 7 Station Locations

WA5WCP EME Mobile System Interconnect



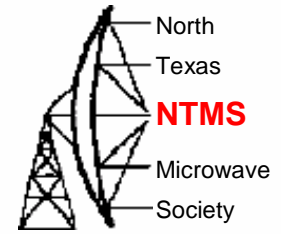
gpp 11 Oct 2005

Set Up and Operation

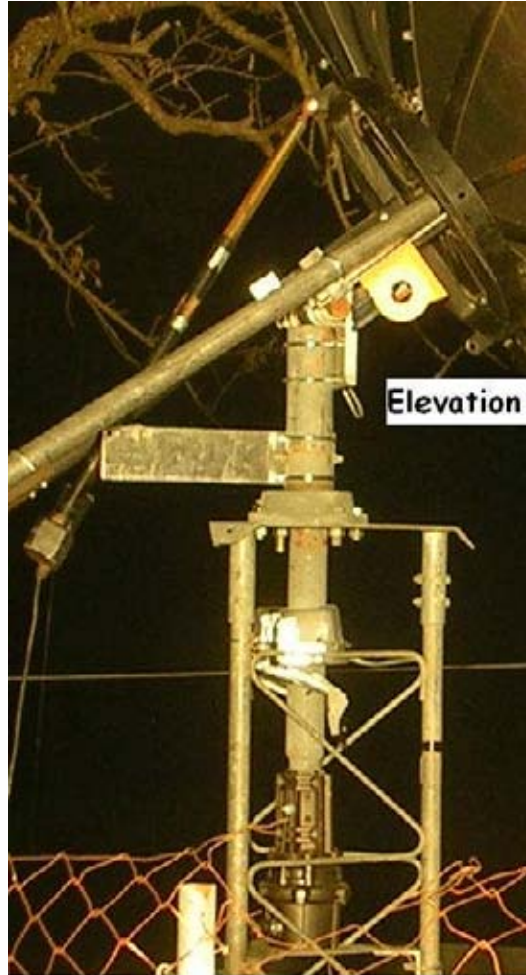
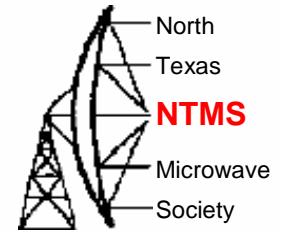


- Four Hours from Arrival to Operation
- Assemble : Dish Pictures
- Cable Interconnects
- **Calibration** : Sun or Visible Moon Shot
- Initial Tests EM12Im for Procedure
- Depart 9 August 2006 NE US, 25 Aug 2007

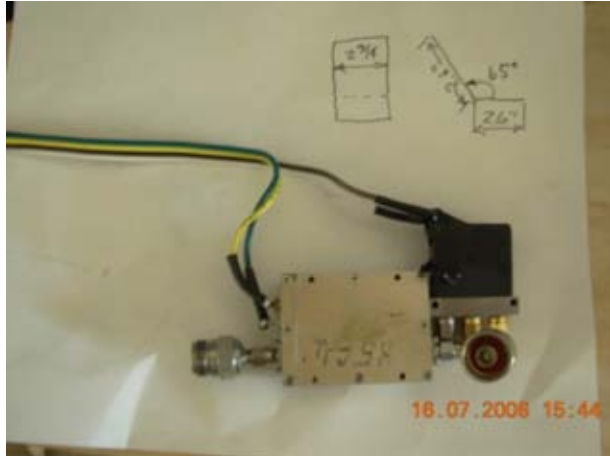
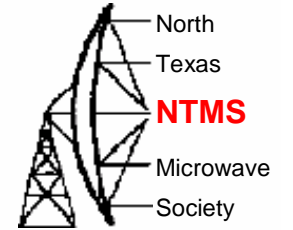
Initial Tests at EM12 EME Contest 2005



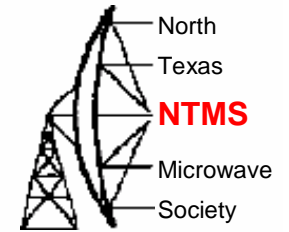
Azimuth Elevation Mount



At EM12 EME Contest 2005 1296 MHz Feed: Square Septum With Scalar Ring

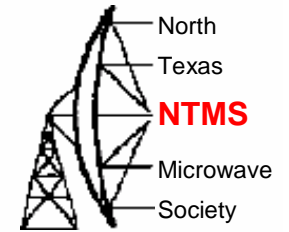


Portable Operating Locations In NE US 2006



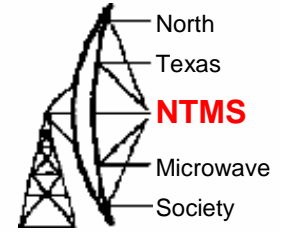
- W1JJ – “Mick” Mc Manus: Warwick, RI
- K7BV – Dennis Motschenbacher : Colchester, CT (as W1AW)
- N1UR – ED Sawyer, Barre, VT
- NC1I – Frank Potts, Southwick, Mass

Portable Operating Locations In NW US 2007

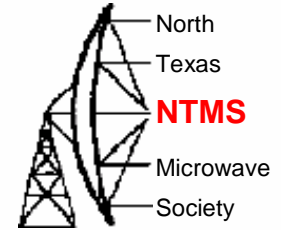


- Wyoming – Rock Springs Airport hosted by Judy and Gary Valentine N7RUG & N7OQP
- Utah - The Great Salt Lake in Toole hosted by Dave WA7GIE
- Idaho – Idaho Falls hosted by Dee KD7DL

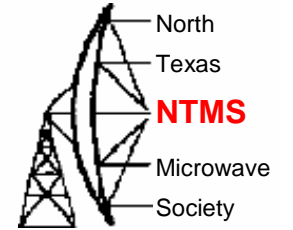
WA5WCP Mobile 5,4,3,2,1



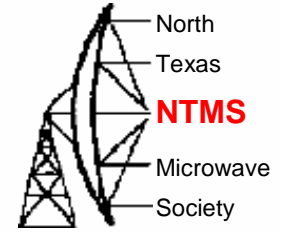
WA5WCP Mobile 5,4,3,2,1



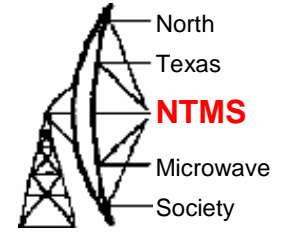
WA5WCP / 1 @ W1JJ RI



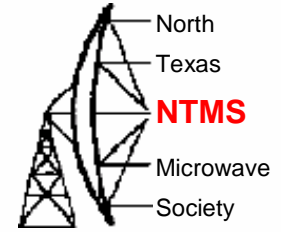
WA5WCP / 1 @ W1JJ RI



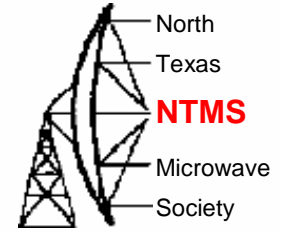
WA5WCP / 1 @ W1JJ RI



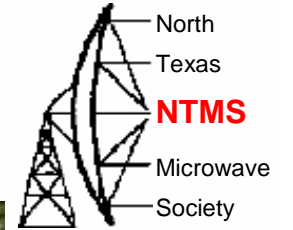
WA5WCP / 1 @ W1JJ RI



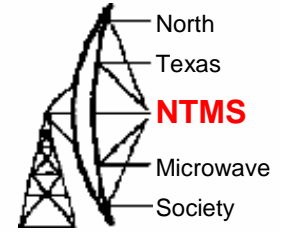
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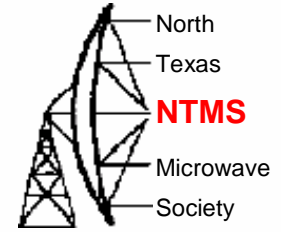
WA5WCP / 1 @ W1JJ RI



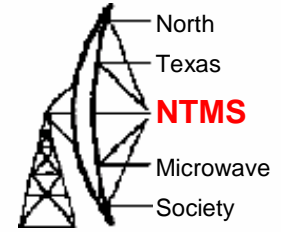
WA5WCP / 1 @ W1JJ RI



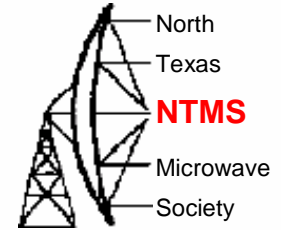
WA5WCP / 1 @ K7BV/1 Ct W1AW



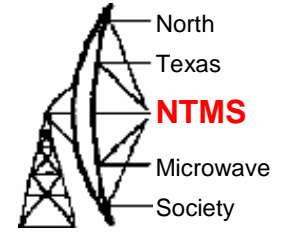
WA5WCP / 1 @ K7BV/1 Ct W1AW



WA5WCP / 1 @ K7BV/1 Ct W1AW

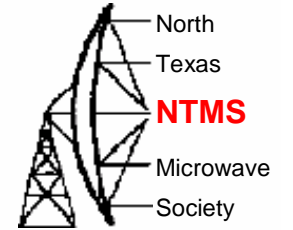


WA5WCP/1 @ N1UR VT

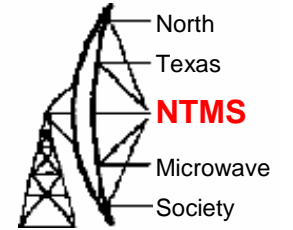


WA5WCP/1 Vermont at N1UR QTH - 1.2 GHz EME
17 Aug 2006 by Bob W1QA
Departing aerial view

WA5WCP/1 @ N1UR VT



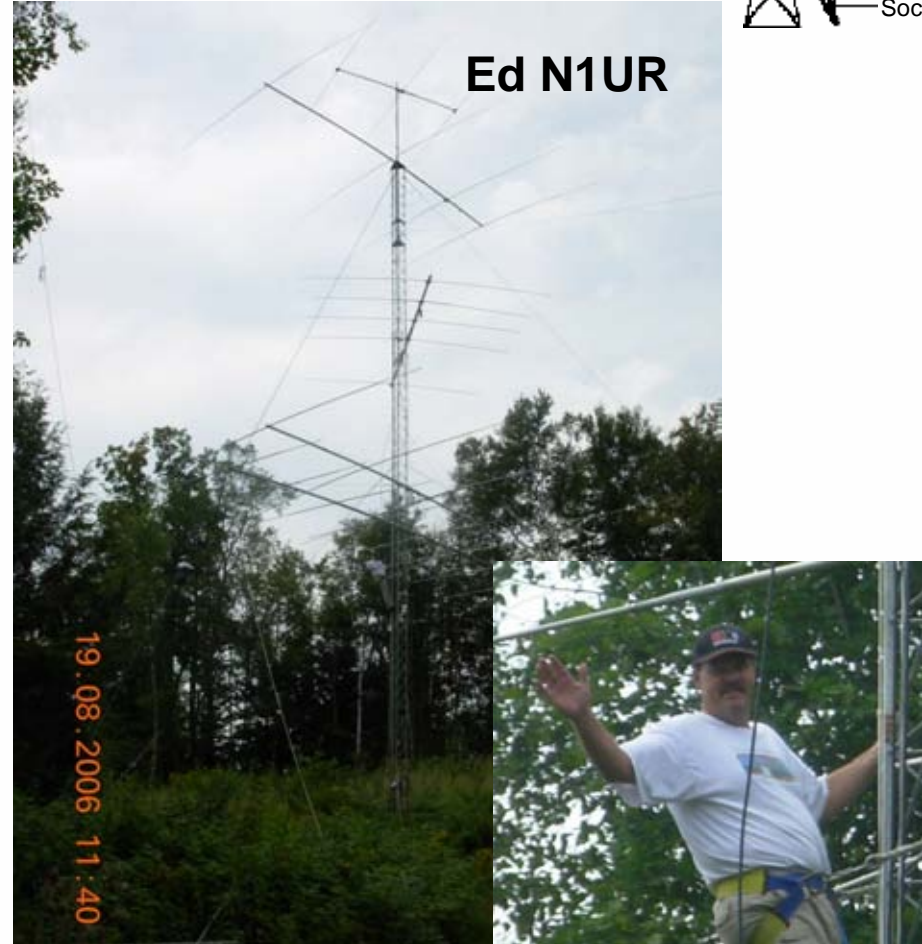
WA5WCP/1 @ N1UR VT



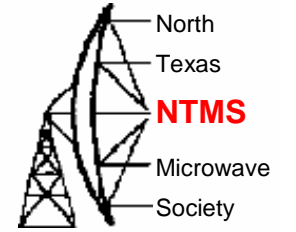
Bob W1QA



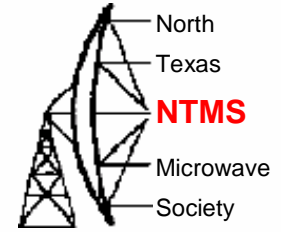
Ed N1UR



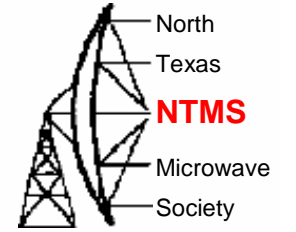
WA5WCP/1 @ NC11 Mass



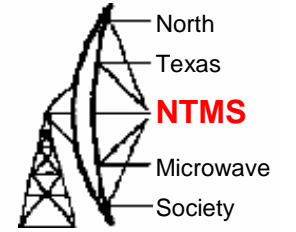
WA5WCP/1 @ NC1I Mass



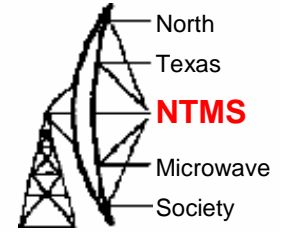
WA5WCP/1 @ NC11 Mass



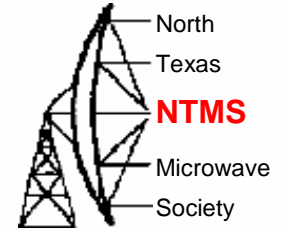
WA5WCP/1 @ NC1I Mass



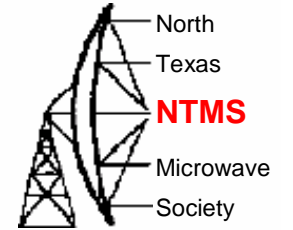
WA5WCP/1 @ NC1I Mass 2304 MHz Feed



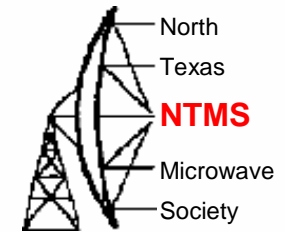
NC1I 432 MHz EME Array



WA5WCP/1 Four States on 1296 EME in 16 Days Aug 2006

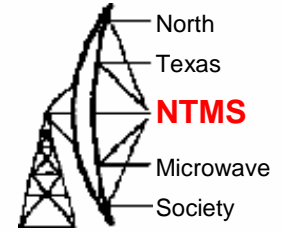


WA5WCP/1 Four States on 1296 MHz EME in 16 Days Aug 2006

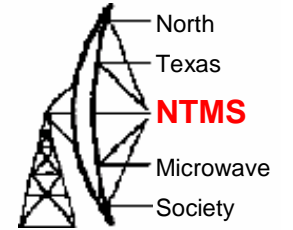


- On 1296 MHz: 111 Contacts : 34 Stations, 13 Countries, 10 US States
- 1296 MHz: 16 Stations From all four locations
- 2304 MHz: 8 Contacts from Mass
- DF3RU, DJ9YW, DL1YMK, F2TU, G3LTF, G4CCH, HB9BBD, HB9Q, HB9SV, KOYW, K2UYH, K5GW, K5JL, K9SLQ, KL6M, LX1DB, N2IQ, OE9ERC, OH2DG, OK1CA, OK1DFC, OK1KIR, OZ4MM, OZ6OL, PA3CSG, SM2CEW, SM4DHN, SM6CKU, VE6TA, W2UHI, W5LUA, W7BBM, WA6PY

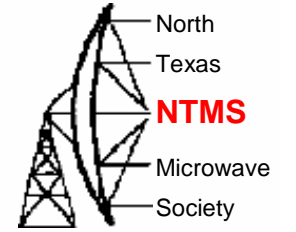
On Airport Parking Lot in Wyoming



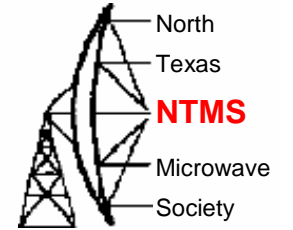
At the Great Salt Lake, Utah



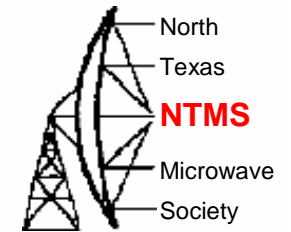
Final Location : Idaho Falls Idaho



WA5WCP/7 Seven States Complete

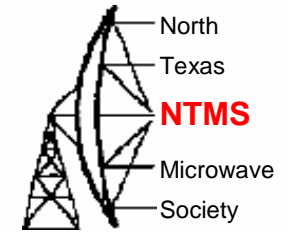


Summary of Ops in NW USA



- On 1296 MHz: 77 Contacts : 33 Stations, 15 Countries, 12 US States
- 1296 MHz: 14 Stations From All Four Locations
- 2304 MHz: 10 Contacts with 7 stations
- DF3RU, DJ9YW, DL4MEA, ES5PC, F2TU, G4CCH, JA4BLC, K1RQG, K2UYH, K5JL, K5SO, K9SLQ, KL6M, LA9NEA, N0OY, N2UO, OE9ERC, OK1CA, OK1DFC, OK1KIR, OZ4MM, OZ6OL, PA3CSG, RW1RW, SM2CEW, SM2AKW, VE6TA, VK3UM, W2DRZ, W5LUA, W7BBM, WA6PY, WW2R

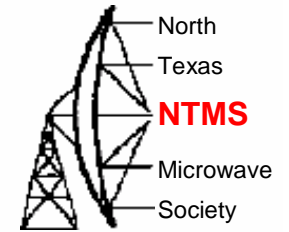
Lessons Learned : Portable EME



- **Scouting Locations is Critical to Success (UHF and Up operators have unique requirements: “Clear Horizon”)**
- **Consider Ground Stability**
- **Being Level for Operating Position is a good thing**
- **Breakdown/ Pack – Move – Setup in One Day is Very Challenging**
- **Calibration is Not Super Critical, but A Minimal Level of Attention is Necessity for 10 ft Dish at 1296MHz**
- **Scheduling vs. Random Contacts Method needs More Consideration**
- **Operation of Two Bands : 1296 MHz and 2304 MHz**
 - => Most Likely Needs More than 2 Moon Rises**
- **To Work 10 ft Dish Stations, More Aperture / More Power Needed**

Big Thanks to:

The Folks that made this possible with Hardware,
Software, and Encouragement / Tolerance



- W5LUA - AI
- K5GW - Gerald
- K1RQG - Joe... Scheduling
- WD5AGO - Tommy
- W1JJ, K7BV, N1UR, NC1I and families / friends
- N7RUG/N7OQP, WA7GIE, KD7DL and families / friends
- K5JL, K0YW, WB5AFY, WB5NNE, KD5SXH, KD5KYV

Back in Texas – K5GW, WA5WCP, and W5LUA

