


DXing Software and Planning for a QRP Adventure

Kai Siwiak, ZL/KE4PT

2017 May 1
to: DCARC

Why I was in New Zealand

- Visited daughter Diana, ZL/KE4QXL
- Reached out to ZL Ham Radio community
 - John Yaldwyn, ZL4JY, kindly responded
 - Invited me to visit  and present my “play” and “work” technical activities
- Brought along small HF DX-go bag station
- Allocated a few hours on two days for ZL/KE4PT operation, targeting Florida

Basic QRP DX-Go-Bag

- Basic DX Go-Bag
 - 5 W HF/VHF/UHF transceiver
 - Morse key
 - 98 Wh battery pack
 - loop and OCEF dipole antennas



antenna

- CW, Phone
- Fits in small, airport-security-friendly (pre-2017), backpack

**Radio:
CW and Phone**

Digital modes DX Go-Bag Ingredients



Computer and Software:
“software defined radio”

Signalink-USB:
sound card

98 W-hr LiPO
battery pack

Radio:
Upper Digi/SSB for all digi-modes

Portable DX Go-Bag Station

- DX Go-Bag
 - 5 W HF/VHF/UHF transceiver
 - Morse key
 - 98 Wh battery pack
 - loop and OCEF dipole antennas
 - audio sound card interface
 - UTC clock ± 1 second
 - small laptop computer



- CW, Phone, and digital modes
- Digital Mode Software on Computer



WSJT-X Modulation Software

WSJT-X v1.5.0-devel by K1JT

File View Mode Decode Save Help

Band Activity

UTC	dB	DT	Freq	Message
1735	-13	-1.1	1963	# F6GCP WB9IIV -01
1724	-15	1.9	1661	# CQ DB9HL JO53
1724	-9	2.1	876	# CQ YY6FEF FJ97
1724	-15	1.8	1078	# DL7ACA RRR73
1724	-1	1.7	1300	# OH1NDA YV4OW R-15
1724	-10	1.6	2018	# W8XLR F4BAL 73
1724	-22	1.6	2233	# CQ ZS6WB KG44
1724	-19	2.0	2469	# WOVLL PA3FOE -23

Rx Frequency

UTC	dB	DT	Freq	Message
1724	-15	1.9	1661	# CQ DB9HL JO53
1724	-22	1.6	2233	# CQ ZS6WB KG44

Log QSO Stop Monitor Erase Decode Enable Tx Halt Tx Tune

15m 21.076 000

+2 kHz

50 40 30 20 10 31 dB

DX Call ZS6WB DX Grid KG44

Az: 106 13114 km

Lookup Add

2017 Apr 02 16:33:41

Tx even

Tx JT65 #

Tx 2233 Hz Tx<Rx

Rx 2233 Hz Rx<Tx

Lock Tx=Rx

Report -22

Generate Std Msgs

Next	Now
<input checked="" type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>

Receiving JT9+JT65 Tx-Enable Disabled

400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800

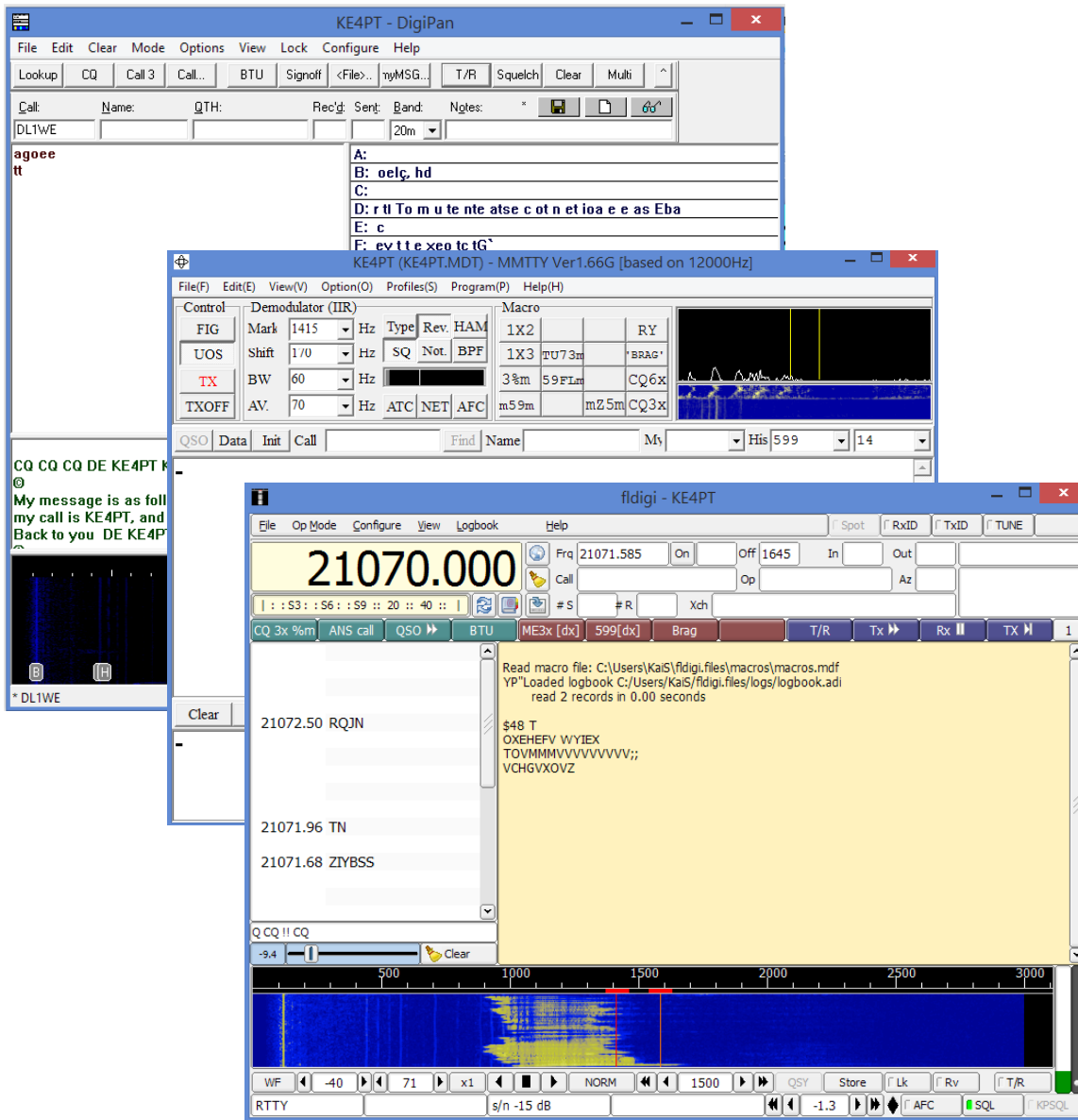
17:24 17:24 17:35

Bins/Pixel 4 Start 300 Hz Zero 0 Palette Adjust... Flatten

JT65 2500 JT9 N Avg 5 Gain 3 Default Cumulative

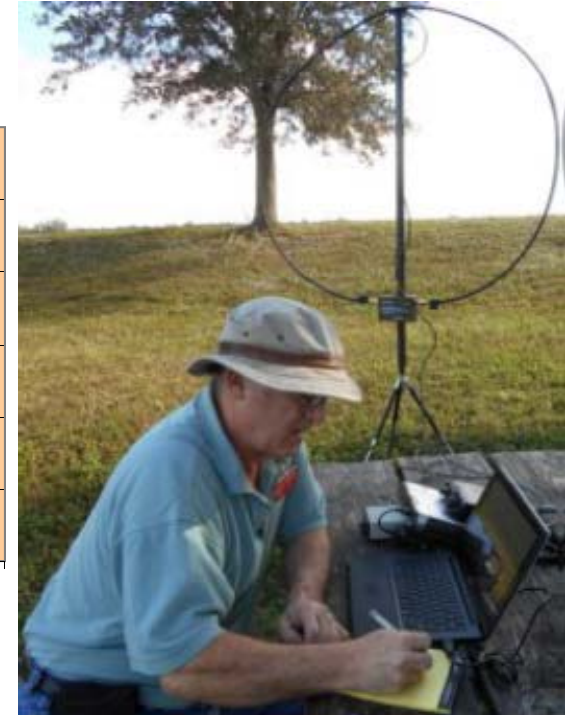
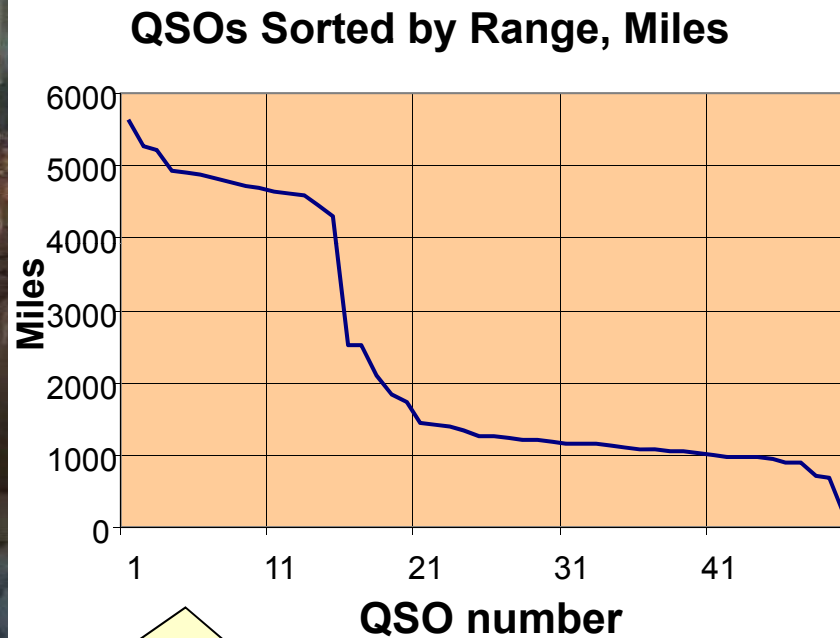
- Turns your SSB radio into a **software defined radio**
- WSJT-X supports **JT-9** and **JT-65** modes
- Adds 20 dB to the link margin over CW

More Digital Modulation Software



- Use your SSB transceiver as a **software defined radio**
- **Digipan** for PSK
- **MMTTY** for RTTY
- **FLDIGI** for *dozens* of digital modes
- More free software being produced!

Living Room and Field Testing



Initial tests from inside my living room in Coral Springs, FL; **demonstrated 5,630 mile path**

However...
The ZL ↔ FL path is 8,135 miles!

Further tests from Vista View Park in Broward County, FL; **verified the equipment list**

DX Go-Bag Station Living Room Test Results



That's a confidence builder!

DX Propagation Planning

“The future belongs to those who prepare for it” — Ralph Waldo Emerson

“The future belongs to those who prepare for it today” — Malcolm X

Use the free HamCAP 1.9:

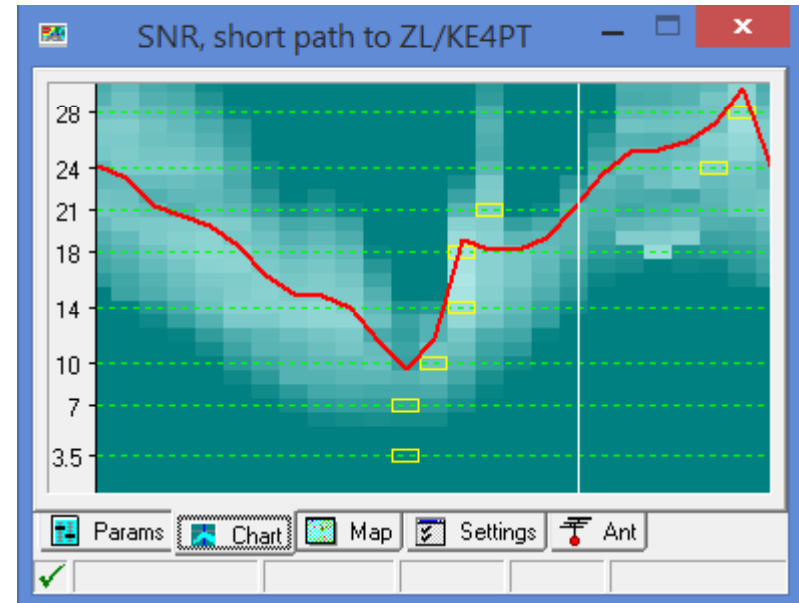
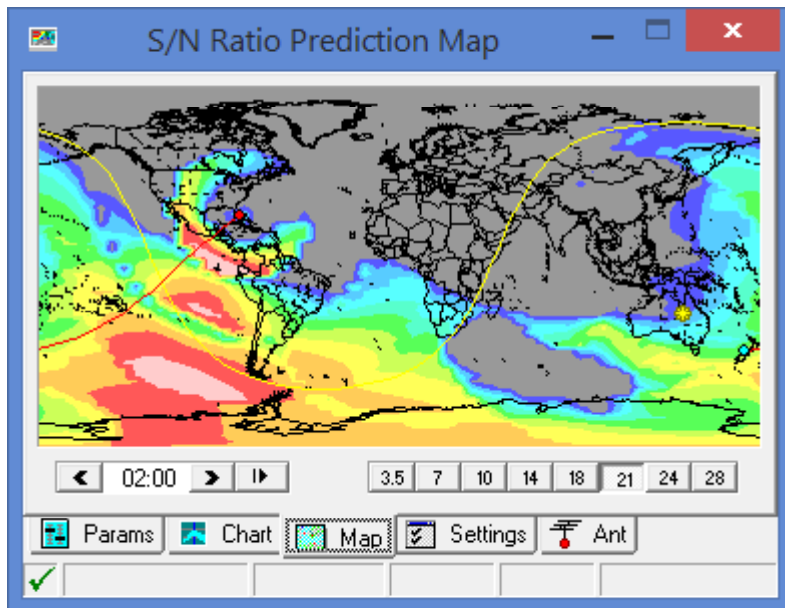
www.dxatlas.com/hamcap/

or:

Use the free on-line tool:

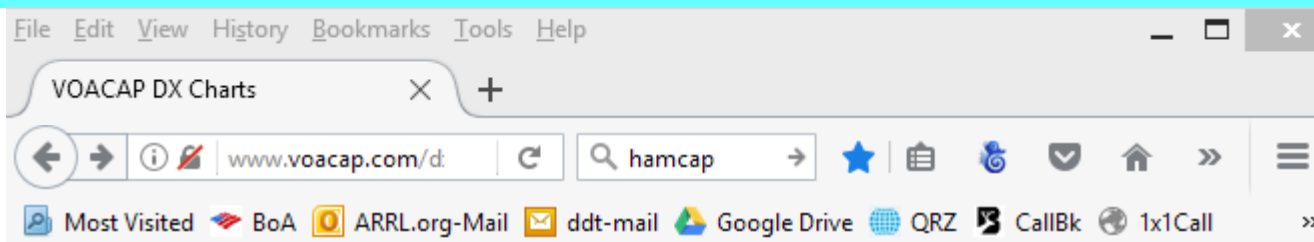
www.voacap.com/p2p/index.html

HamCAP 1.9



- Uses the VOACAP engine
 - GUI built by Alex Shovkopyas, VE3NEA
 - Stand alone or integrates with DXAtlas
- www.dxatlas.com/DxAtlas/**

VOACAP Online for Current DXpeditions



VOACAP DX Charts

Make your HF propagation predictions for DXpeditions

Just enter your Maidenhead grid locator below, and short-path and long-path HF propagation predictions will be calculated to the DX sites below. Read the short introduction to [VOACAP DX Charts](#).

Your grid locator:

DX Sites

- 3D2AG/p Rotuma, Apr 2-22, 2017
 - [P29VXG Papua New Guinea](#), Apr 6-12, 2017
 - YJ0YM Vanuatu, Apr 6-17, 2017
 - 3B7 Saint Brandon, Oct 2017
 - S9CQ Sao Tome & Principe, Oct 12-21, 2017
-

© 2010-2017 Jari Perkiömäki (OH6BG), James Watson (HZ1JW) and Juho Juopperi (OH8GLV).
Questions or suggestions? Write to [our Helpdesk](#).

VOACAP Online for General Use

	Transmitter	Receiver
GND	18:39	06:11 11:10 23:38
D	18:08	06:42 10:45 00:04
F	17:28	07:22 10:10 00:38

Fill in specifics:

Modes: CW , SSB, or AM (you can fool it for JT65)

JT65 link has 20 dB margin over CW, choose CW and add 20 dB (100X) to power, for “JT65 at 5 W” use “CW at 500 W”

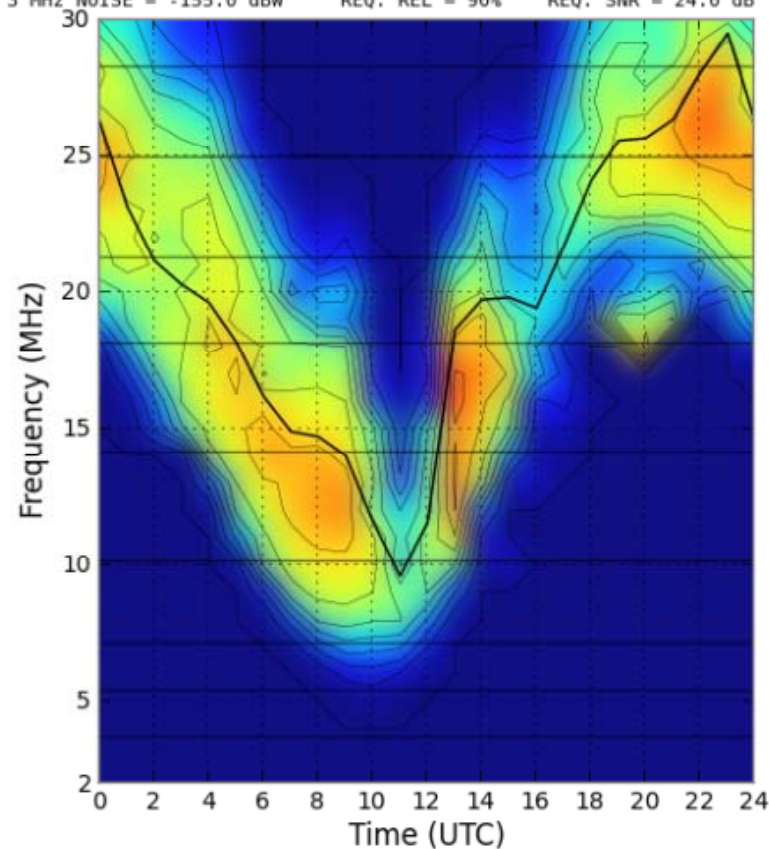
Propagation Prediction ZL ↔ FL

www.voacap.com/prediction.html

JT65 at 5 W (same as CW at 500 W)

Circuit Reliability (%)

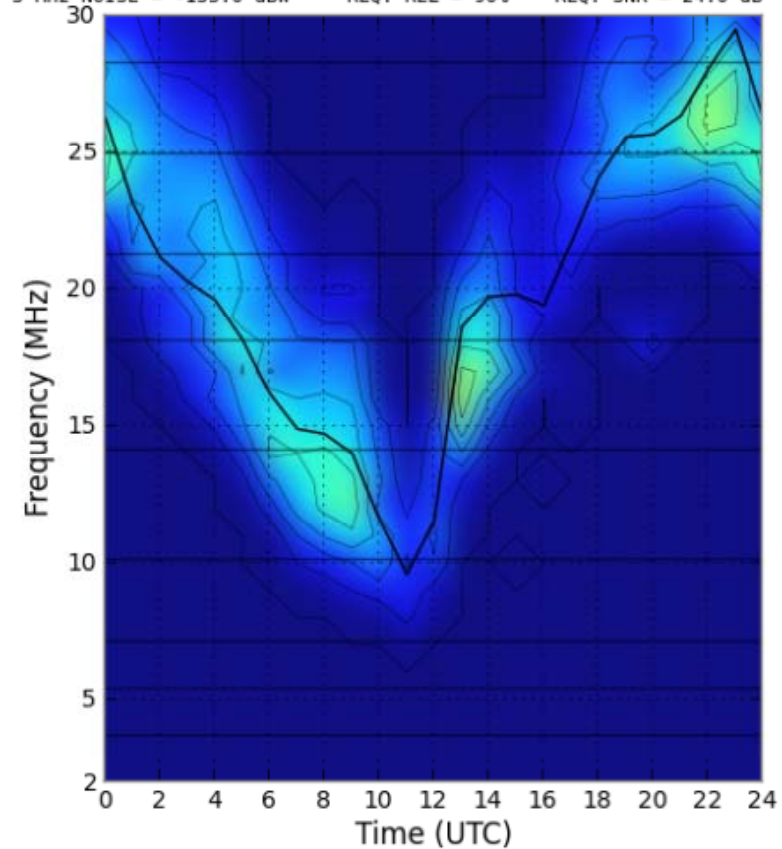
Dec 2014 SSN = 67. Minimum Angle= 0.100 degrees
ZL/KE4PT S Florida AZIMUTHS N. MI. KM
41.28 S 174.77 E - 26.25 N 80.27 W 78.29 235.13 7069.9 13092.4
XMTR 2-30 2-D P-to-P[voaant/v14.ant] Az= 0.0 OFFaz= 78.3 0.400kw
RCVR 2-30 2-D P-to-P[voaant/d10m.ant] Az= 0.0 OFFaz=235.1
3 MHz NOISE = -155.0 dBW REQ. REL = 90% REQ. SNR = 24.0 dB



CW at 5 W

Circuit Reliability (%)

Dec 2014 SSN = 67. Minimum Angle= 0.100 degrees
ZL/KE4PT S Florida AZIMUTHS N. MI. KM
41.28 S 174.77 E - 26.25 N 80.27 W 78.29 235.13 7069.9 13092.4
XMTR 2-30 2-D P-to-P[voaant/v14.ant] Az= 0.0 OFFaz= 78.3 0.004kw
RCVR 2-30 2-D P-to-P[voaant/3el10m.ant] Az= 0.0 OFFaz=235.1
3 MHz NOISE = -155.0 dBW REQ. REL = 90% REQ. SNR = 24.0 dB



New Zealand is on the Underside of Earth 8,135 miles from Florida (took some getting used to the gravity there)



Image by Chris Dean, KD7CNJ

Searched for Portable Ham Radio Sites...



Searched High...



Searched Low...

TSUNAMI INFORMATION: OWHIRO BAY



After an earthquake that's long (one minute or more) or strong (it's hard to stand up), quickly move to high ground and/or inland. Don't stop until you're well beyond the yellow zone on this map. Don't stop until you're well beyond the yellow zone on this map. Don't stop until you're well beyond the yellow zone on this map.

KEY INFORMATION FOR VISITORS

- If you are staying in a caravan or holiday home, make sure you have a plan to get to high ground and/or inland.
- If you are staying in a holiday home, make sure you have a plan to get to high ground and/or inland.
- If you are staying in a holiday home, make sure you have a plan to get to high ground and/or inland.

NEW ZEALAND'S TSUNAMI HAZARD

The Bay of Plenty is one of the most vulnerable areas in New Zealand to tsunamis. The Bay of Plenty is one of the most vulnerable areas in New Zealand to tsunamis. The Bay of Plenty is one of the most vulnerable areas in New Zealand to tsunamis.

HAZARDS AND RESPONSES

When a tsunami strikes, you may see a large wave or a series of waves. You may also feel a strong earthquake. If you see a large wave or a series of waves, or if you feel a strong earthquake, you should move to high ground and/or inland as quickly as possible.

SIGNS YOU WILL SEE



Known hazards in this area include



Falling rocks



Steep cliffs / Falls



Large waves



Seals



Vehicle / Pedestrian shared access



Extreme weather conditions



Beach driving required

FOR MORE INFORMATION
Wellington.govt.nz
Phone 499 4444

Absolutely
POSITIVELY
WELLINGTON CITY COUNCIL | Wellington

Gates locked Sundays 9am-6pm
No vehicle access permitted.

Consulted
a Wizard...

(got my hat back)



The Weta Group story

On Wellington's Miramar Peninsula, a leafy suburb has been quietly transformed into a creative hub for some of the world's most respected movie businesses.

(design & manufacturing), Weta Digital Post Production (post-production production), Stone Street Studios South Hire (movie equipment), the to-end capability and resources in their origins as a place of fancy are the norm and how grand, can be realized by the international movie industry in New Zealand. Weta's founders and their evolution as leading industry leaders is a testament to creative vision.

A major role Peter Jackson took in the success of the Weta Group was to bring together a group of talented individuals who shared a passion for the craft of filmmaking. Peter Jackson, Richard Taylor and Tim Roth were the founding members of the Weta Group. A combination of people, passion and a shared vision of the future of the New Zealand film industry led to the formation of the Weta Group. Together with the other Weta Group companies, Weta Digital, Weta Post Production, Stone Street Studios, South Hire, Weta Workshop and Weta FX, the Weta Group has become a leading force in the New Zealand film industry. The Weta Group's success is a testament to the power of creative vision and the ability to bring together a group of talented individuals who share a passion for the craft of filmmaking.

CAVE
ENJOY A "BEHIND-THE-SCENES" GLIMPSE INTO WETA WORKSHOP
Book online or with one of the WETA staff today!

Wizard's Choice: Portable Station Sites



JT65 from Frank Kitts Park,
Wellington, New Zealand,
radio site #1

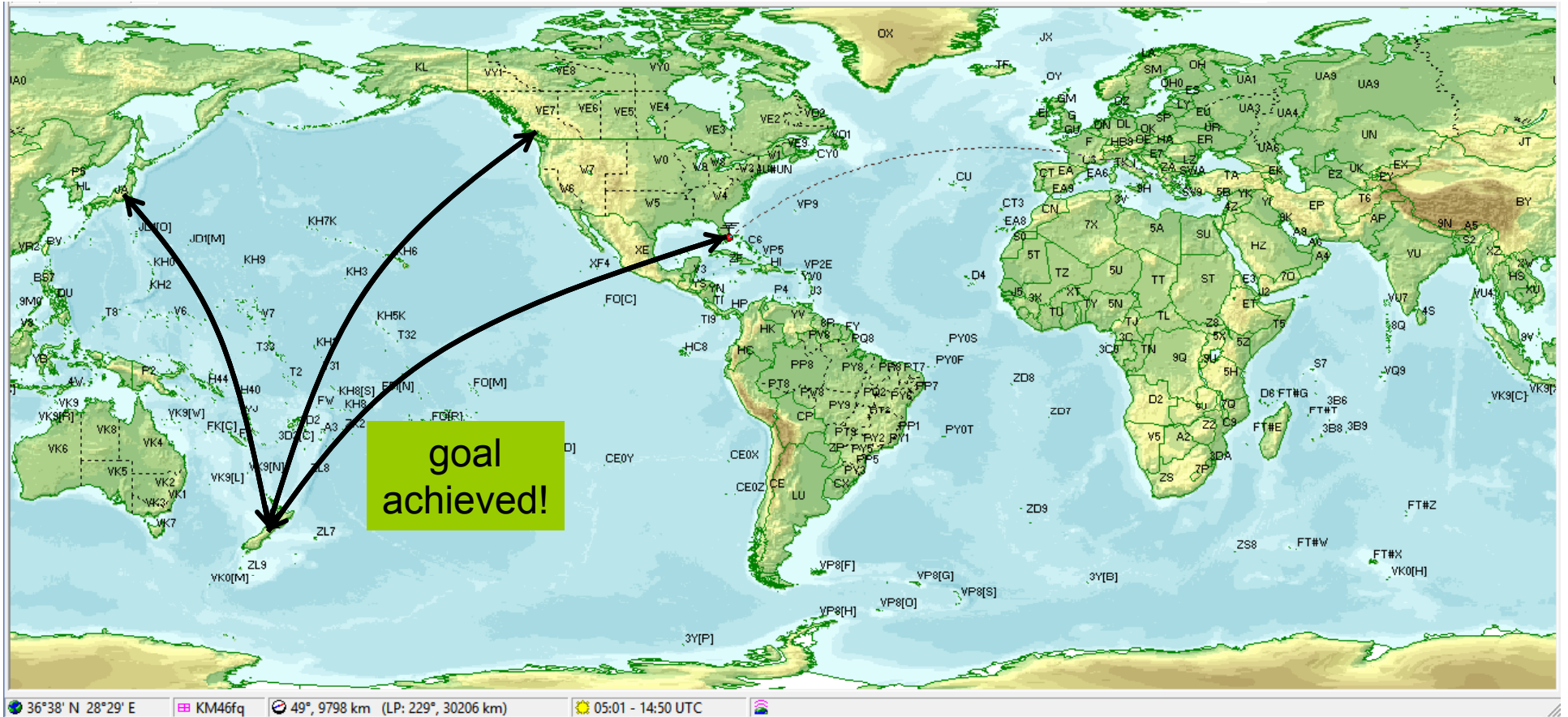


CW from Mount Victoria,
Wellington, New Zealand,
radio site #2

A View from Downtown Botanical Gardens Tramway




Worked Three Countries on JT65



There is a lot of Pacific Ocean between ZL and populous land to North and North East: **it's 8,000 miles or nothing!**

Results

- Great deal of fun!
- 2 hours allocated for JT65 made a handful of QSOs in 3 countries
- 2 hours allocated for CW, but no QSOs!
- Contacts went as predicted!
- Dan, AI4CJ, snagged a “new one” for DXCC!



Danny E. Ross 6260 Rose Terrace, Plantation, FL. 33317-1843 USA EL96vd
Rig: iCOM-756, Heathkit SB-220, CL-33A Moseley 5-element Beam
51' EZ-Way Tower, Carolina Windom Dipole 40/80m
Signalink USB, FLDIGI, JT-65-HF, N1MM

Confirm QSO	Date (Z)	UTC	Freq/Mode	Power	Report
ZL/KE4PT	6 DEC 2014	00:40	21.076	40w	-20db

73 Tnx 4 new one from NZ!! And for ur qsl card.....dan

A New Zealand QRP Adventure

Kai Siwiak, ZL/KE4PT
Dec 2014, Wellington,
New Zealand





**Thank You, 73
es gd DX
de ZL/KE4PT**

The Sun at exactly the same time,
over the course of a year.
Top is summer solstice
Bottom is winter solstice
Bright spot is a total eclipse of the Sun



