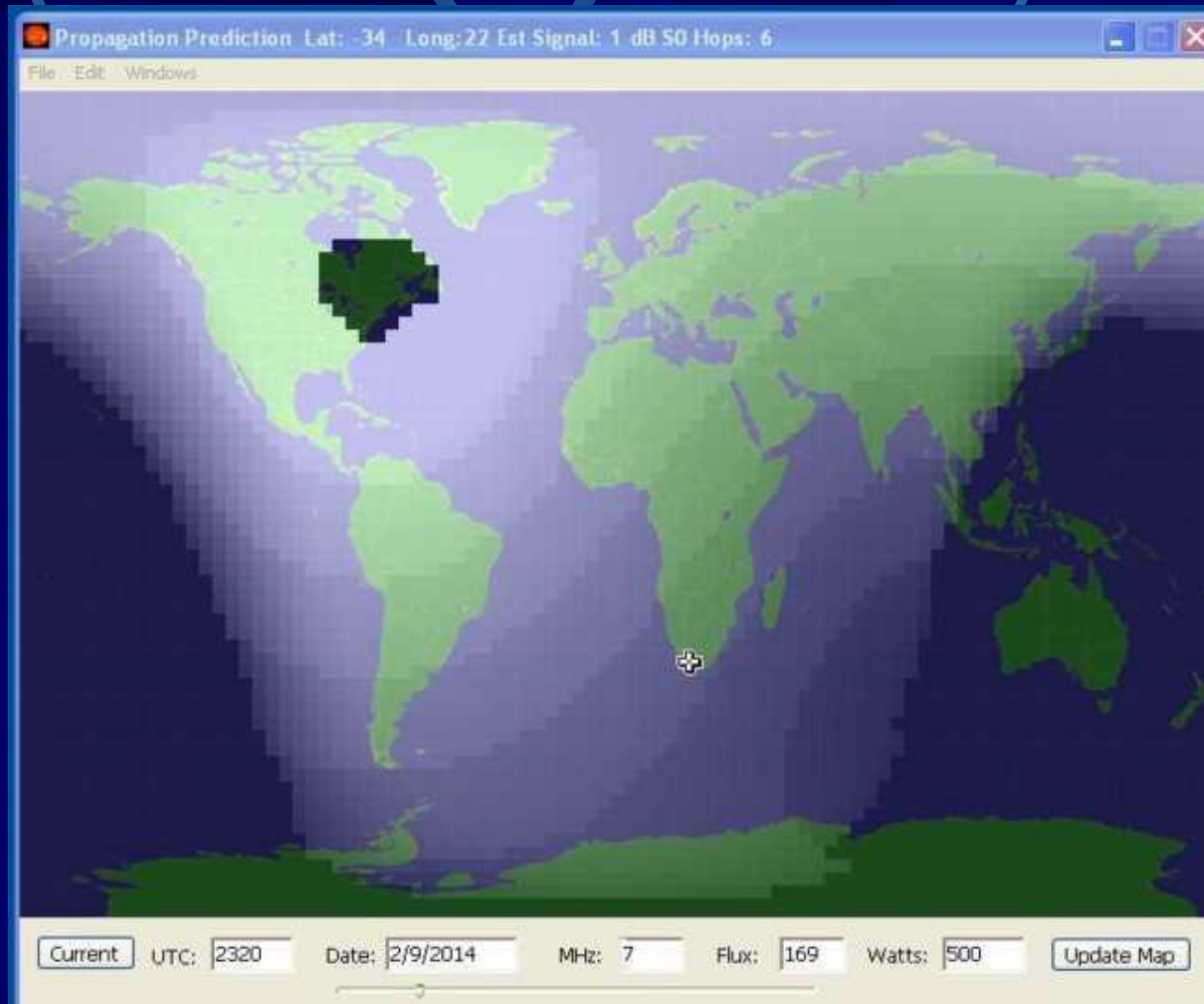# "Nowcasting" with DX Toolbox™

Doug Leach – VE3XK

Nowcasting with *DX Toolbox™*

- There are several point-to-point propagation prediction programs, but *DX Toolbox™* stands out by also providing realtime maps of projected signal strength from your QTH to the cursor location.
- Includes dozens of windows with radio, solar and geomagnetic conditions for the DX operator.
- Includes an HF Propagation tutorial.
- Available for Mac OS9, Mac OSX, Windows 98/NT/2000/XP/Vista/System 7, iPhone, iPad, & iPod Touch
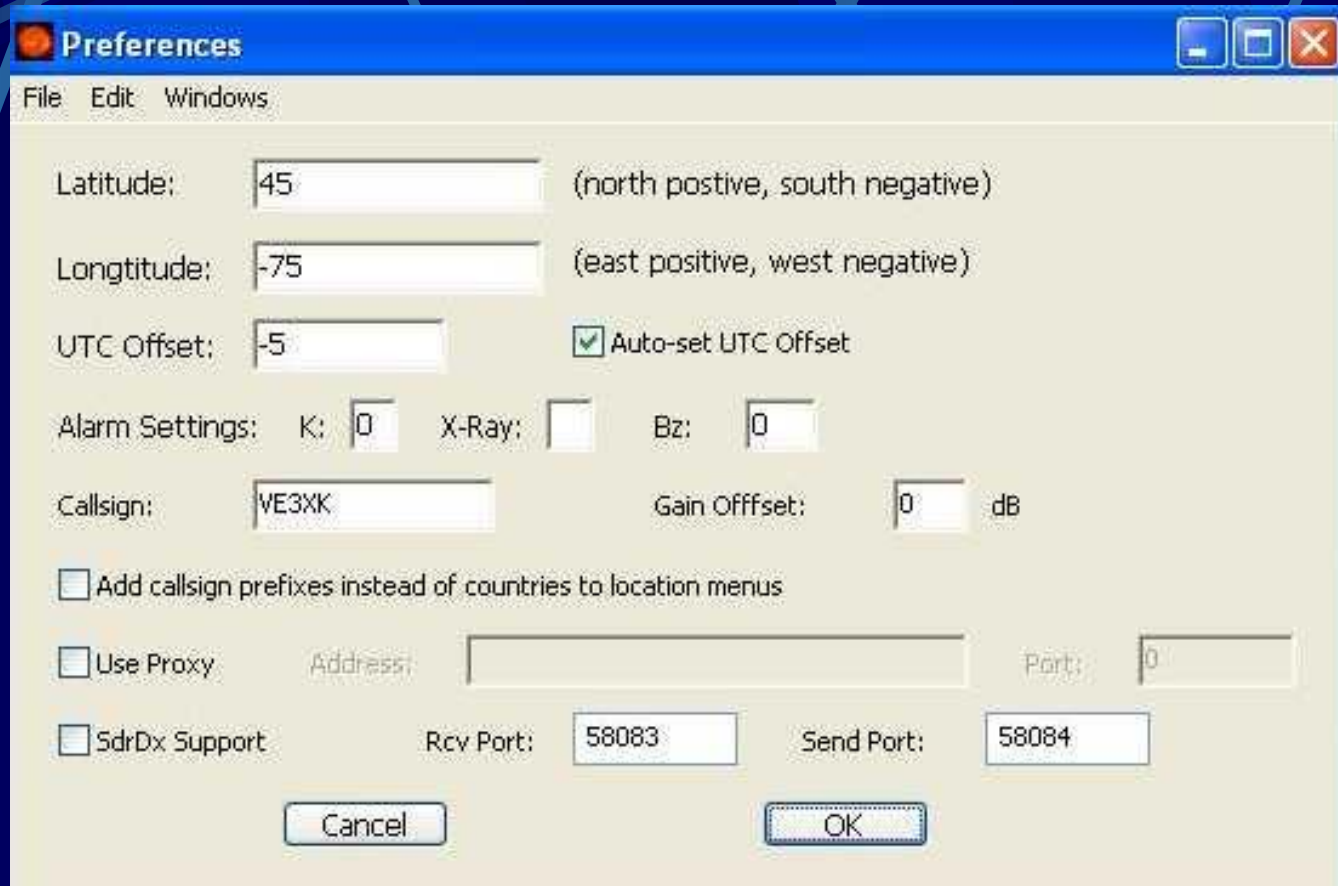- Free trial download. Registration US $24.99

Nowcasting with *DX Toolbox™*

This screen sets DX Toolbox apart from other propagation software that merely predicts path loss. 40M CW signal from VE3XK at ZS will be just 1 dB over noise floor at 23:20 on 2/9/14 even with 500W.

Propagation Prediction Lat: -34 Long: 22 Est Signal: 1 dB S0 Hops: 6

File Edit Windows

Current   UTC: 2320   Date: 2/9/2014   MHz: 7   Flux: 169   Watts: 500   Update Map

Nowcasting with *DX Toolbox™*

Everything starts with the Preferences screen.
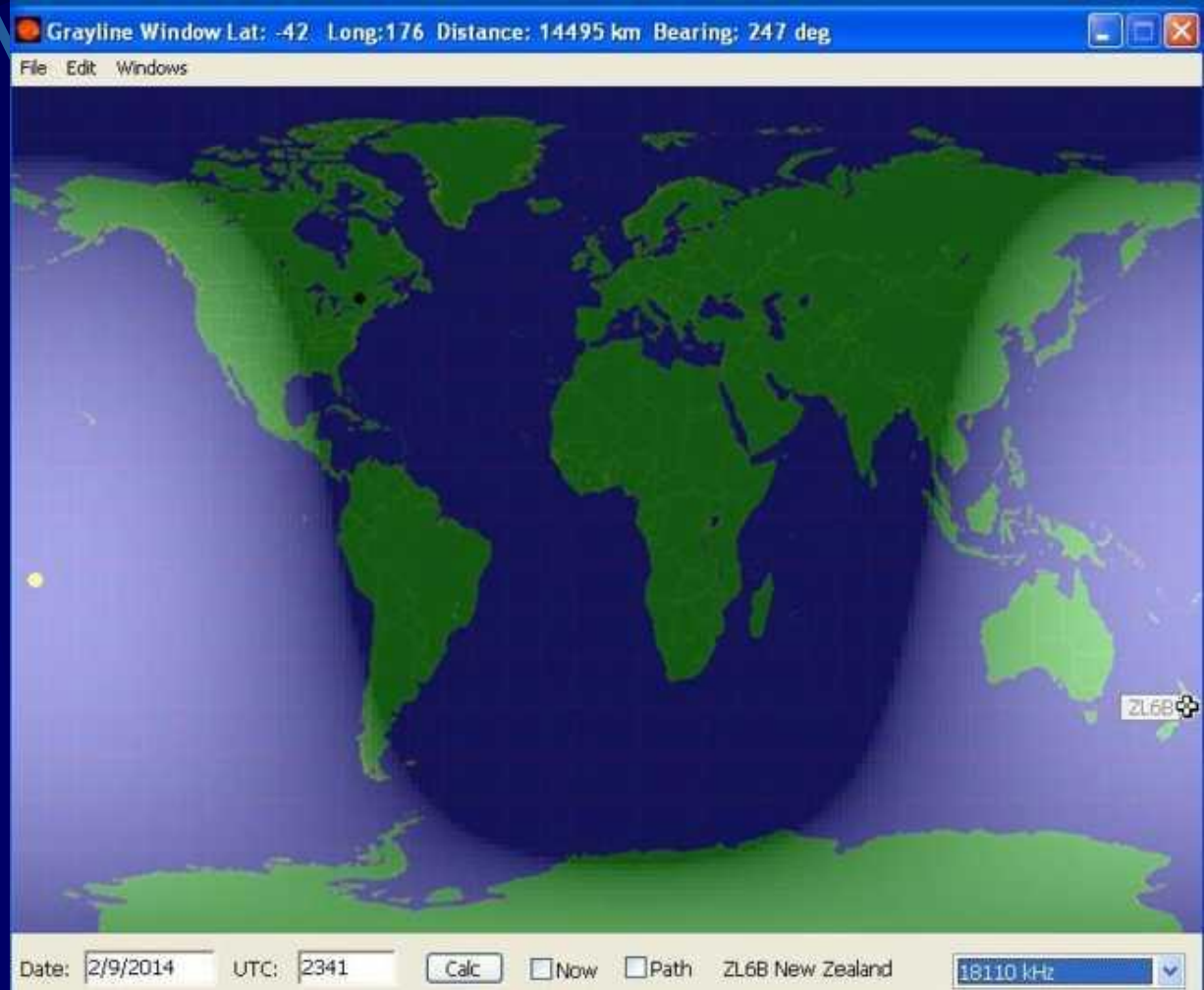
Nowcasting with *DX Toolbox™*

This screen shows current conditions for current date/time. Data is obtained from the internet. The buttons provide access to various related graphs.
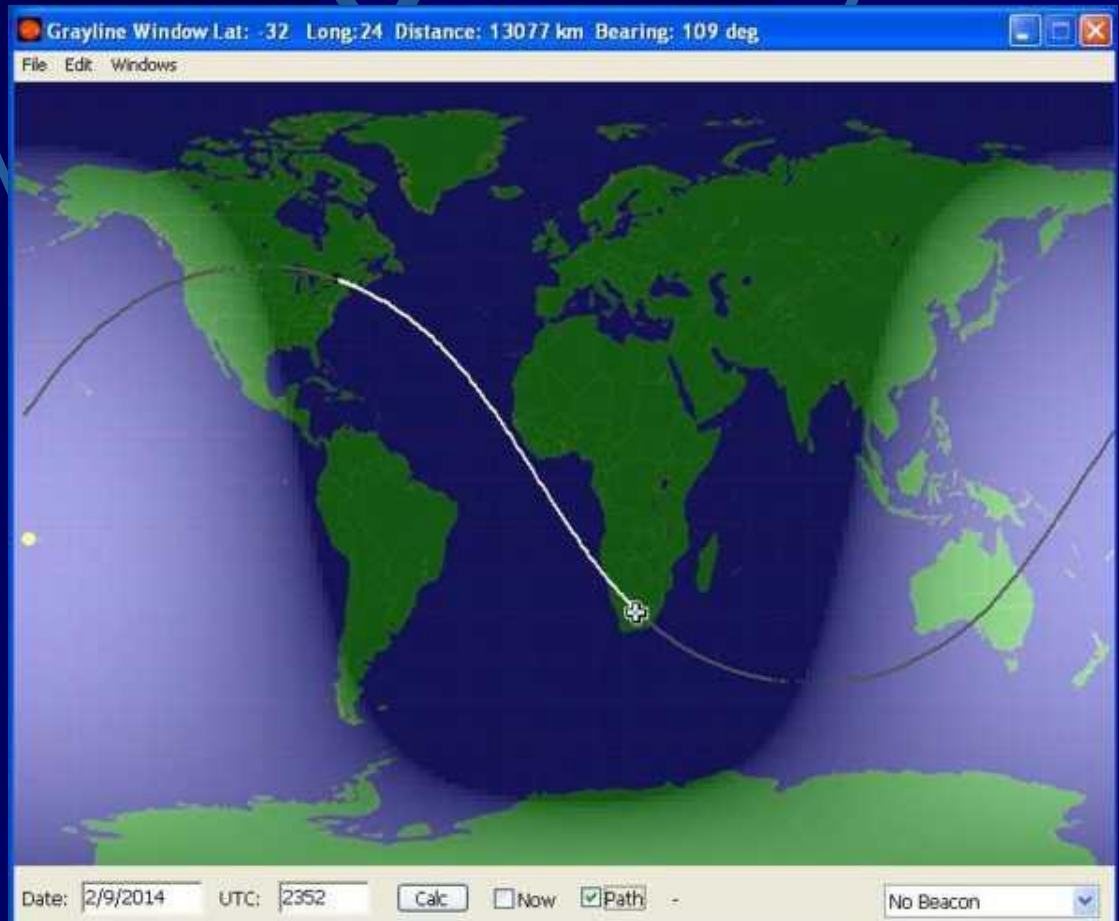
This is the basic screen.
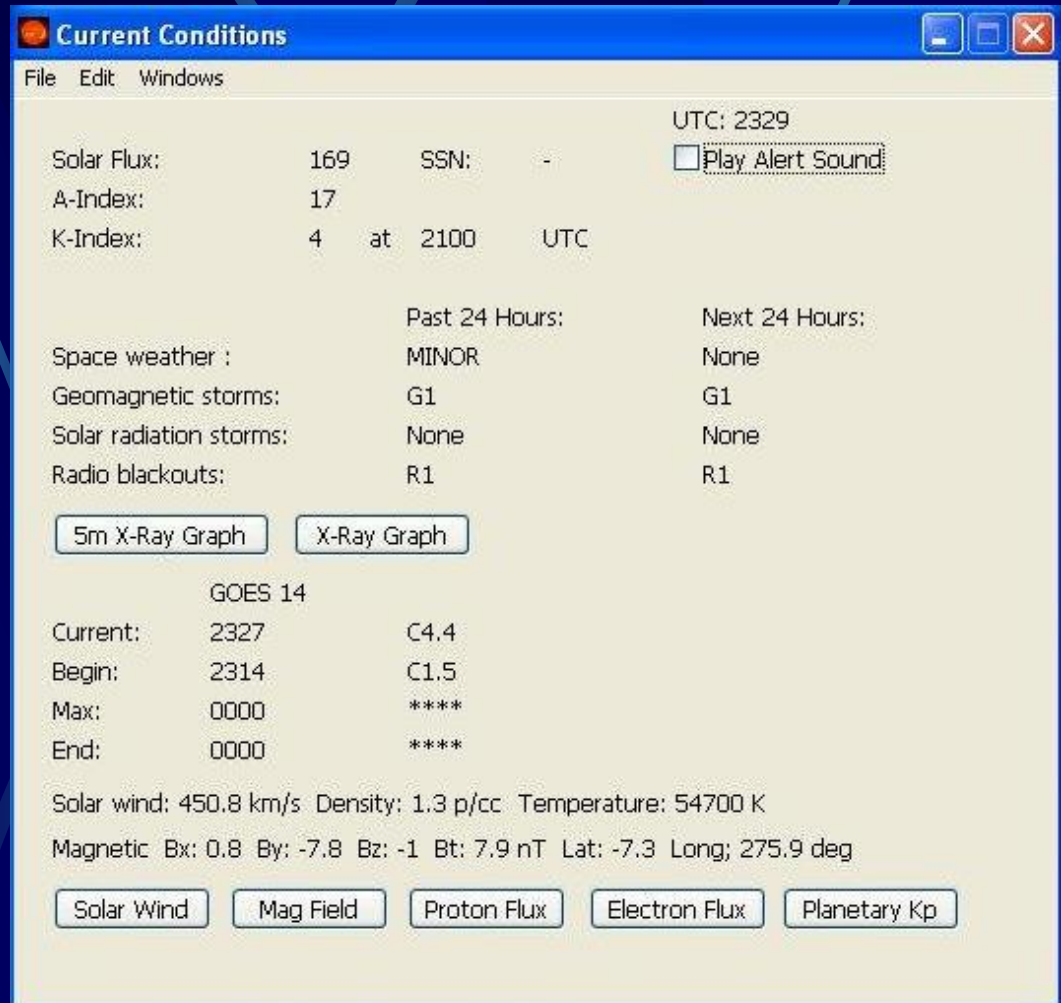
Nowcasting with *DX Toolbox™*

Conventional grayline map for 23:41UTC on Feb 9, 2014. At the moment this screen was grabbed, the ZL6B 17M IARU Beacon was transmitting. The distance from VE3XK to the beacon is 14,495 km at 247°

Grayline Window Lat: -42   Long:176   Distance: 14495 km   Bearing: 247 deg

File   Edit   Windows

ZL6B

Date: 2/9/2014   UTC: 2341   Calc   ☐ Now   ☐ Path   ZL6B New Zealand   18110 kHz
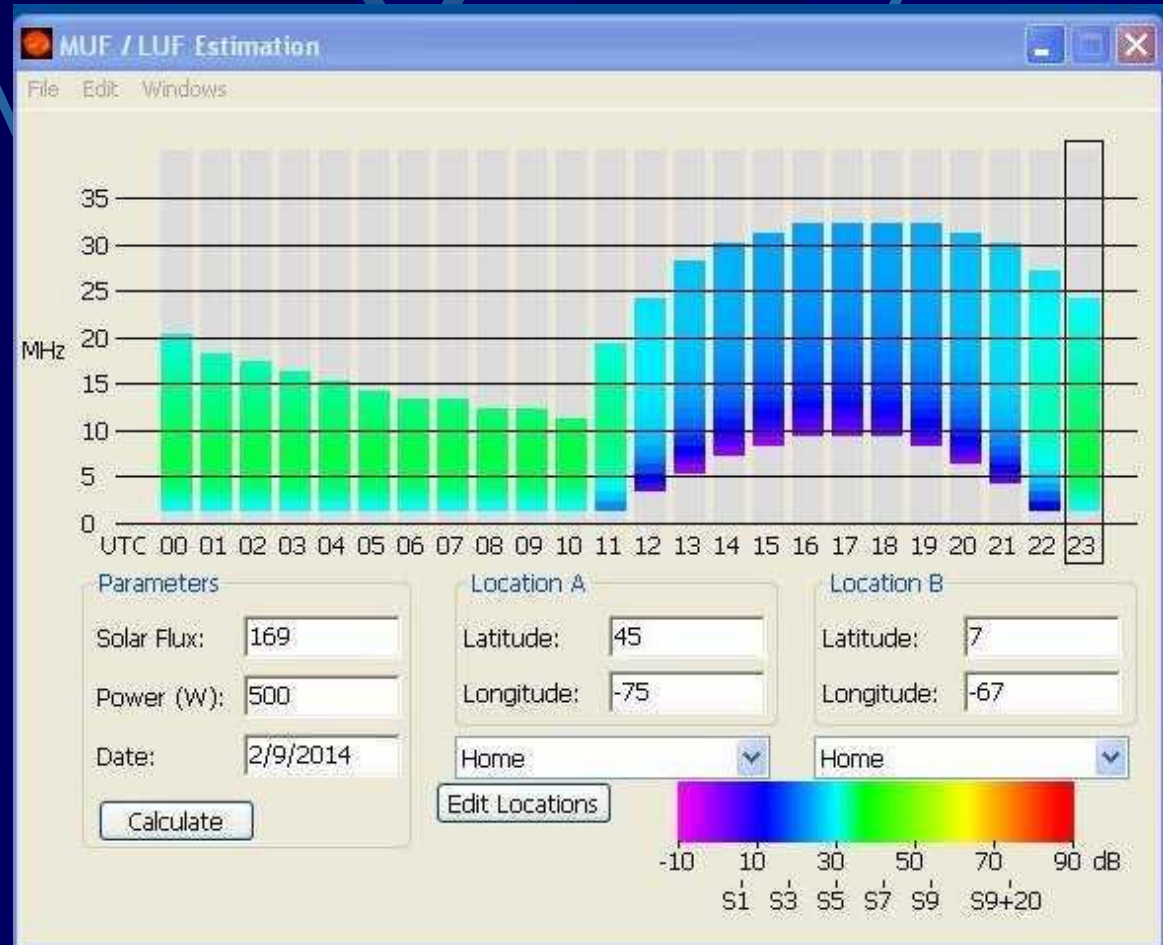
Nowcasting with *DX Toolbox™*

Screen shows the transmission path from VE3XK to South Africa. If the map was Azimuthal Projection instead of Mercator Projection, the transmission path would be a straight line and the grayline circular, showing the sunlight footprint.

Grayline Window Lat: -32 Long:24 Distance: 13077 km Bearing: 109 deg

File Edit Windows

Date: 2/9/2014   UTC: 2352   [Calc]   ☐ Now   ☑ Path   -   No Beacon

Nowcasting with *DX Toolbox™*

Screen shows the MUF (Maximum Useable Frequency) and LUF between VE3XK and Trinidad over the 24 hour period 2/9/14. You can see at a glance why the north-south path is so good when 10M is open. Sig S5 at 18:00UTC
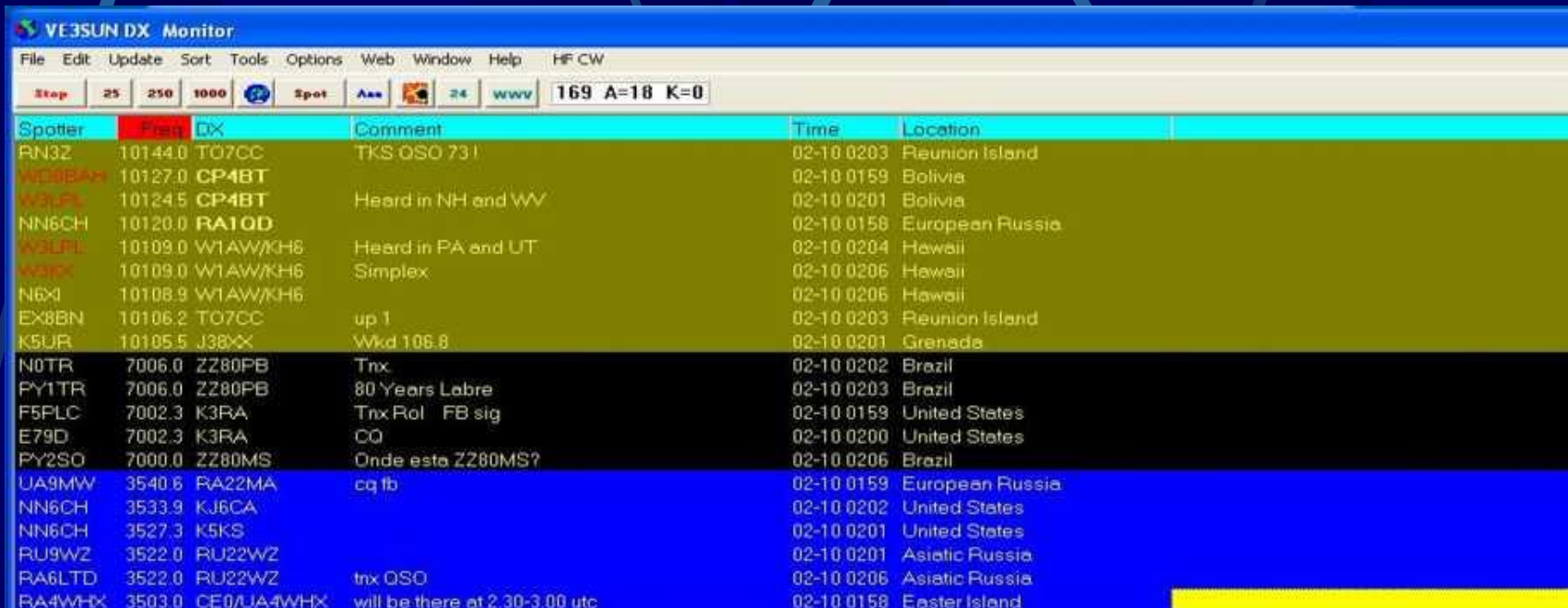
Nowcasting with *DX Toolbox™*

This screen shows the best frequency (20M) to work Taiwan on 2/9/14 at 23:00 UTC.With 500 watts to a vertical and projected S1 at the far end you can't expect to crack a pileup.
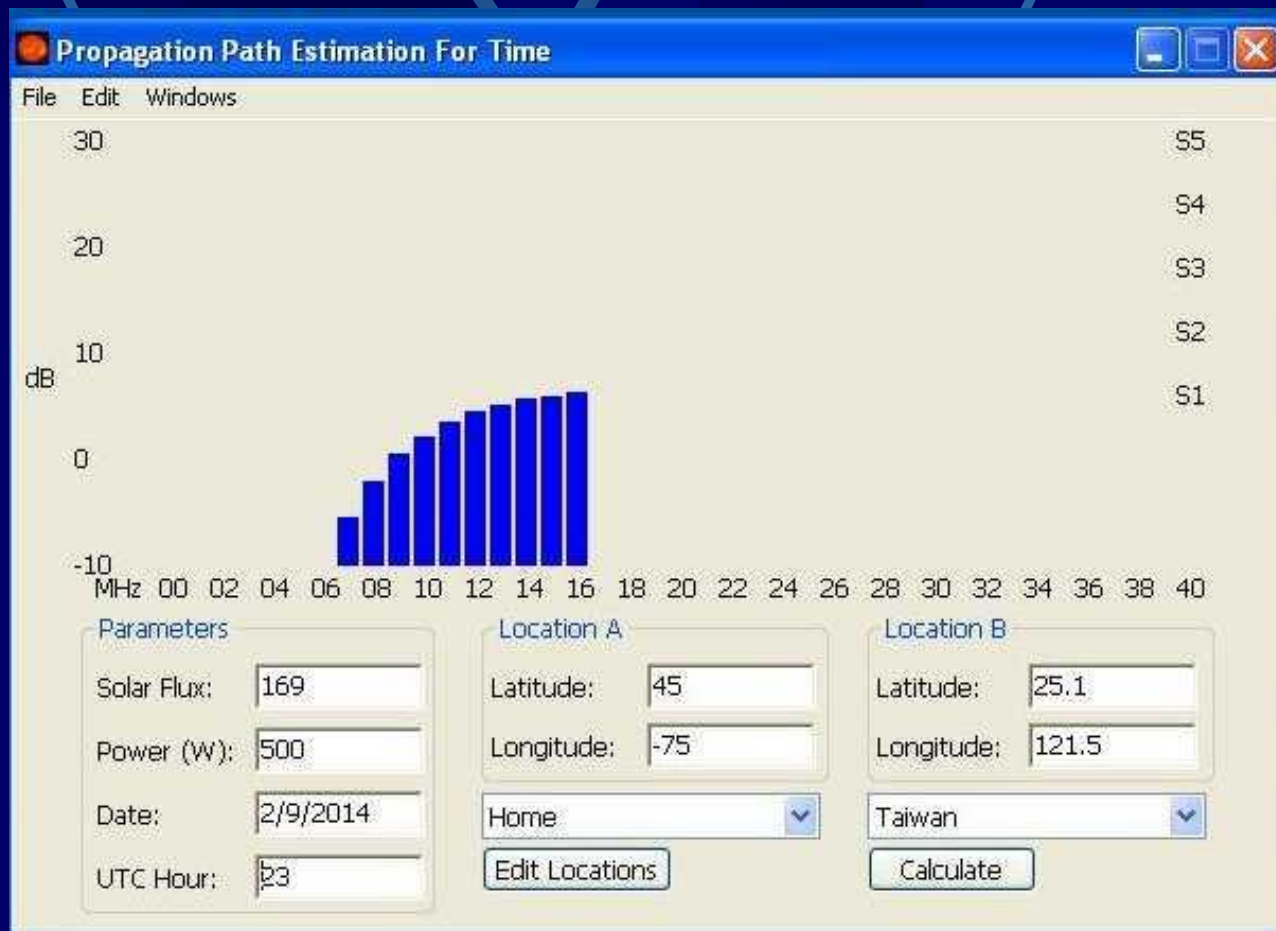
An Enhanced Spotting Program

Screen shot shows the VE3SUN DX Monitor™ program displaying DX CW spots on 30, 40 and 80M, sorted by mode, band and frequency. Stations using Logbook of The World are shown in bold typeface. Spots by "local" stations (selectable distance) are shown in red. Very useful aide.

Putting It All Together

This screen is where DX Toolbox pays off. DX Monitor at top shows the CW spots on 30M. I want to work VU2GSM as I need India on 30M, so I call with no reply. A glance at the DX Toolbox Propagation Prediction screen shows that it would take 6 hops and signal strength at VU2GSM would be only 6 dB over his noise floor – a real long shot.
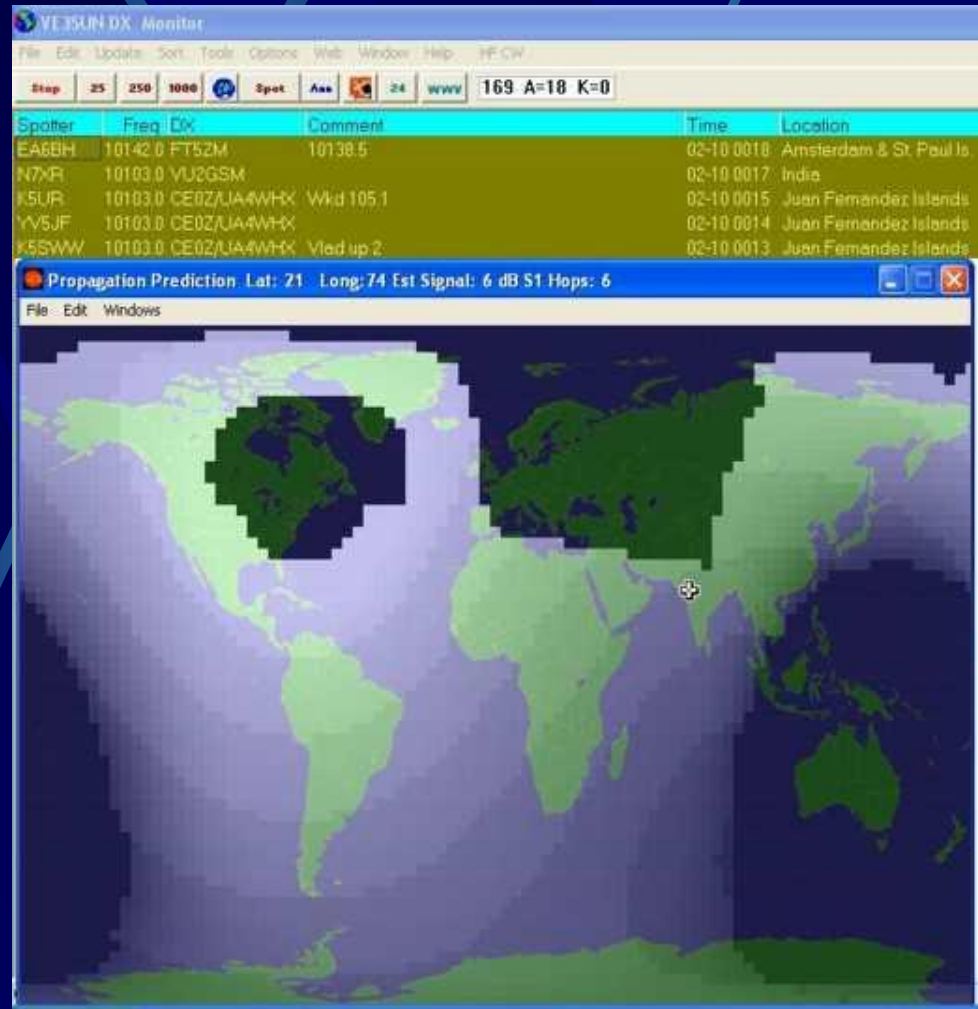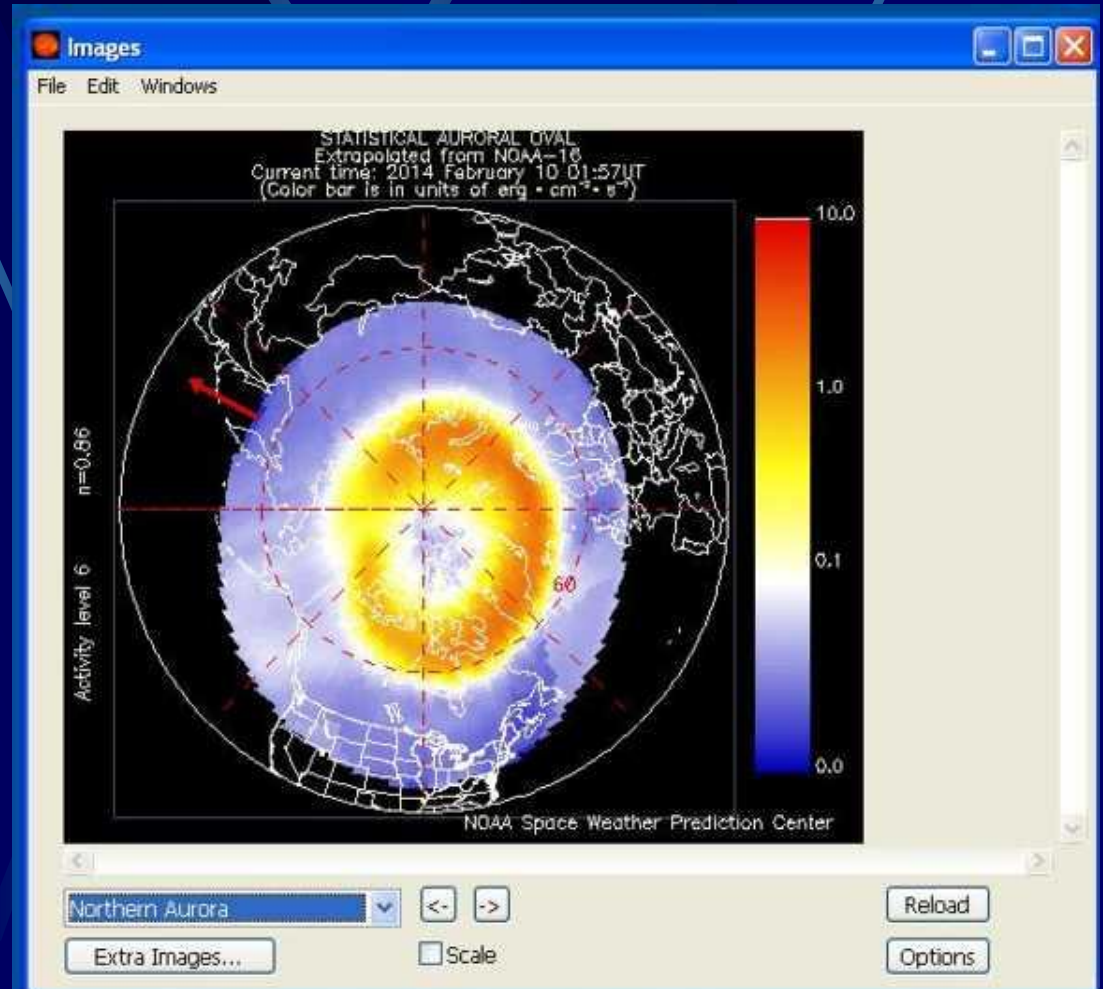
Aurora on *DX Toolbox™*

- Among the many additional images included in DX Toolbox are the next two.

- 1. North America Aurora Forecast Map (Azimuthal) for date/time shown.
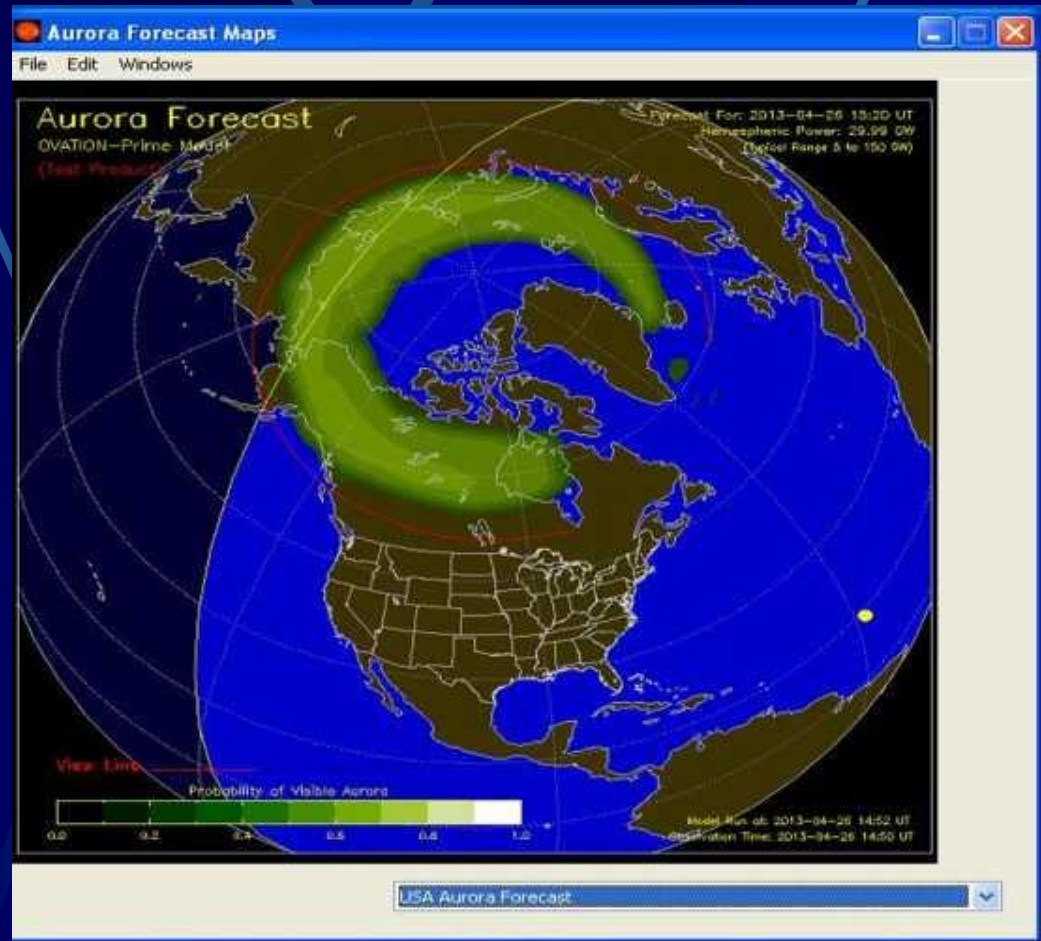
More Aurora on *DX Toolbox™*

- 2. Northern Aurora Map (also Azimuthal) at date/time shown. Note the intensity scale at right.

Other Features of *DX Toolbox™*

Realtime Displays of:

- Solar Flux
- A-Index
- K-Index
- Solar Flux Index
- Sun Spot Number
- Solar Wind
- Earth's Magnetic Field
- Proton and Electron Flux Levels
- Blackout and Storm Condx
- NCDXF/IARU Beacons

Reports and Forecasts :

- WWV Geophysical Alert
- 27 Day Space Outlook
- 45 Day AP Forecast
- Geomagnetic Data
- Particle Data
- Solar Data
- Magnetometer Analysis
- Predicted SSN and SFI
- Space Weather Predictions
- and much more

Does All This Work for Me?

Your Logbook DXCC Account (VE3XK - CANADA)

Account Status

DXCC Award	New LoTW QSLs	LoTW QSLs in Process	DXCC Credits Awarded	Total (All)	Total (Current)
Mixed *	18	0	214	232	228
CW *	18	0	172	190	190
Phone *	21	0	159	180	176
Digital *	1	0	112	113	111
160M	1	0	1	2	2
80M	14	0	22	36	36
40M	25	0	81	106	106
30M	45	0	56	101	101
20M	25	0	118	143	141
17M	47	0	83	130	130
15M	33	0	104	137	136
12M	34	0	71	105	105
10M	26	0	95	121	119
6M	4	0	32	36	35
2M	1	0	1	2	2
Challenge	253	0	658	---	911

* = Award has been issued

View Award Credit Matrix

Yes it works but ….

- The previous awards list confirms DX Toolbox™ works but it would be better to be able to enhance the signal or subtract noise from signal.

- I am now experimenting with the MFJ-1024 Active antenna (top) in my attic and the MFJ-1025 Noise Canceling Signal Enhancer (bottom).

- MFJ-1025 uses phasing of my 43 ft vertical and the MFJ-1024 to rotate the pattern and to add or subtract the signals.

Nowcasting with *DX Toolbox™*

Questions?

Thank You

de VE3XK