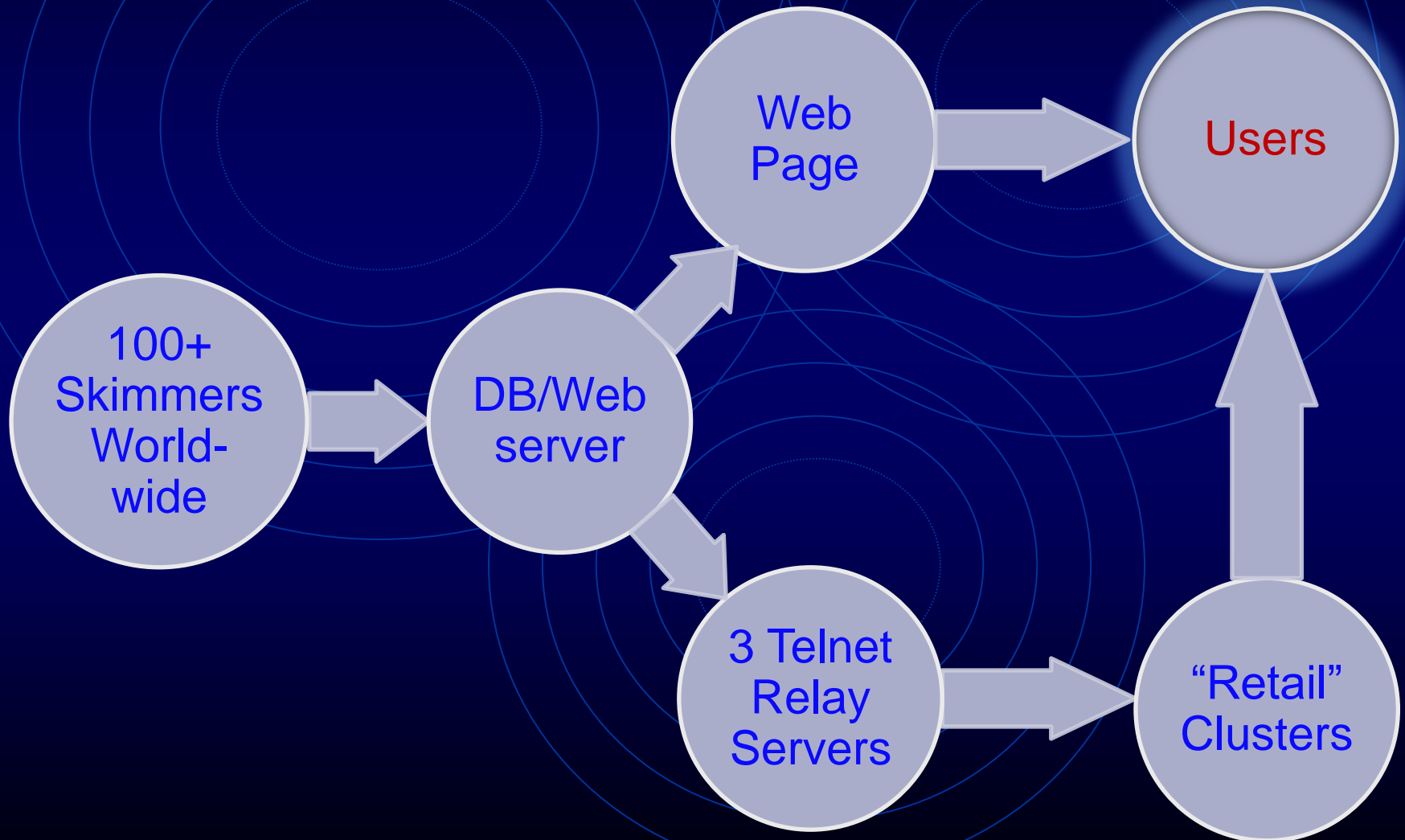# The RBN and You

Presentation to the Frankford Radio Club by Pete Smith, N4ZR

November 11, 2014

Tonight's Topics

- What is it? Does anyone not know?
- How does it work?
- How can I use it?
  - For spots
  - For antenna testing
  - To learn about propagation
- How can I get spotted more?

How the RBN Works

Milestones

- 2008 – CW Skimmer released and RBN begun as a web-based system..
- 2008-9 - SDR-IQ and QS1R receivers introduced.
- 2009 - First RBN spots; First Windows Aggregator by W3OA
- 2010 – F5VIH/SV3SJ developed Spots Analysis Tool
- 2011-13 – Huge increase in spot volume and number of Skimmers; 3 "wholesale" relay servers
- 2013 – Release of Viewprop.
- 2014 - Beginning of RBN/Yasme Gapfiller program; development of Skimscan SR; RTTY Skimmer tests

Key Players

- PY1NB - Felipe - Co-founder, servers
- F5VIH/SV3SJ - Nick - server program-ming, Spots Analysis Tool
- W3OA - Dick - developer of Windows Aggregators and SkimScanSR
- KM3T - Dave - server programming, system design, Linux relay server

The RBN Web Site

What You Can Get There

Spots as they happen, filtered or not

no filter selected, showing all spots						rows to show: 50 ▾
search spot by callsign						
de	**dx**	**freq**	**cq/dx**	**snr**	**speed**	**time**
RN4WA	UR7VT	3541.0	CW CQ	5 dB	32 wpm	1950z 06 Jan
DL9GTB	G3JKB	1830.0	CW CQ	20 dB	28 wpm	1950z 06 Jan
SK3W	G3JKB	1830.0	CW CQ	19 dB	28 wpm	1950z 06 Jan
RZ3DVP	OH3FM	1820.4	CW CQ [LoTW]	15 dB	23 wpm	1950z 06 Jan
V51YJ	W1AW/4	24895.0	CW CQ [LoTW]	8 dB	27 wpm	1950z 06 Jan
HA2EQD	UR4LQ	7010.4	CW CQ	4 dB	18 wpm	1950z 06 Jan
DL1EMY	G3JKB	1830.0	CW CQ	16 dB	28 wpm	1950z 06 Jan

Archived Raw Data

| November			
01	Friday	2074KBytes	20131101.zip
02	Saturday	6941KBytes	20131102.zip
03	Sunday	14996KBytes	20131103.zip
04	Monday	3100KBytes	20131104.zip
05	Tuesday	1509KBytes	20131105.zip
06	Wednesday	1603KBytes	20131106.zip
07	Thursday	1874KBytes	20131107.zip
08	Friday	1823KBytes	20131108.zip
09	Saturday	4978KBytes	20131109.zip
10	Sunday	4347KBytes	20131110.zip
11	Monday	1599KBytes	20131111.zip
12	Tuesday	1450KBytes	20131112.zip

Comparing with others- the Spots Analysis Tool

- Created by F5VIH/SV3SJ
- Select a date, a "reverse beacon" station, and calls to compare.
- The tool will produce graphs showing comparative results for up to 10 stations at a given location, over time.
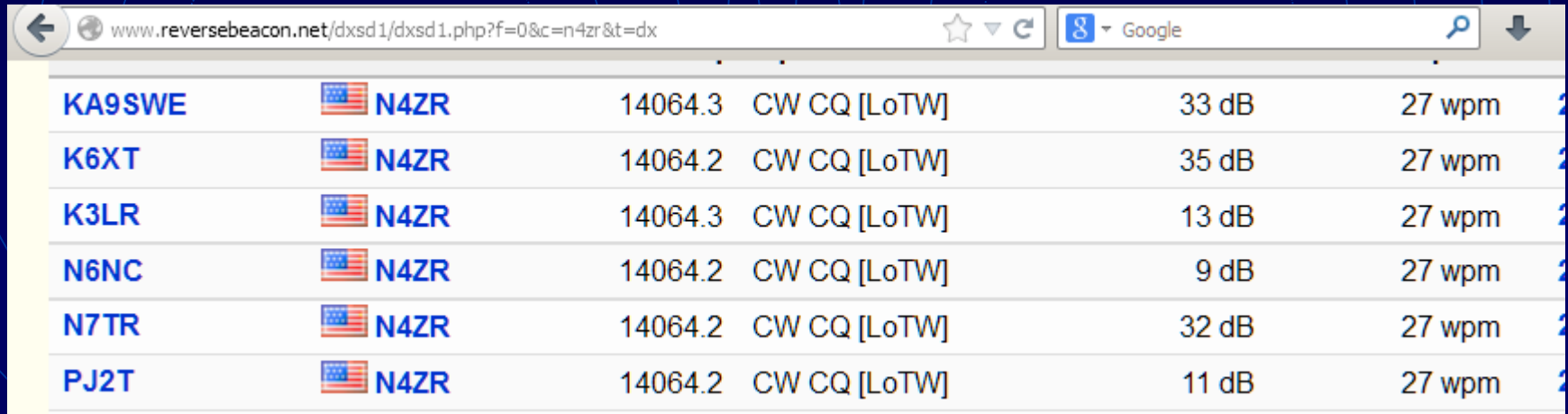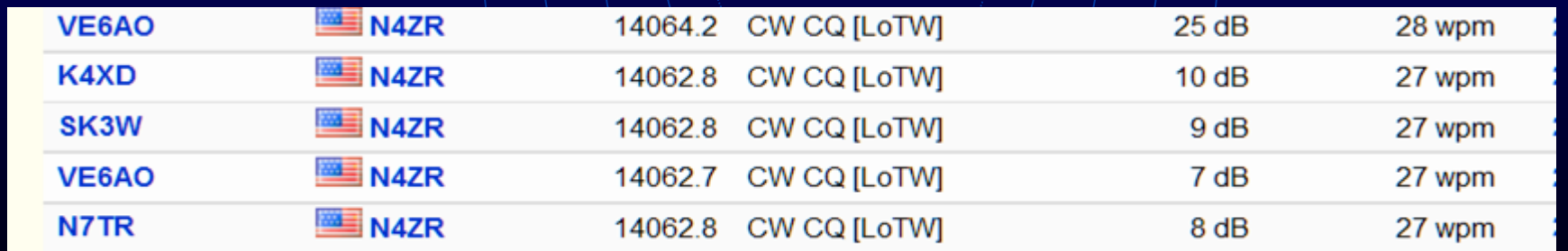- Example – ARRL DX CW, first day, K3LR, W3LPL, N3RS, NQ4I

A little crowded?

Zooming in
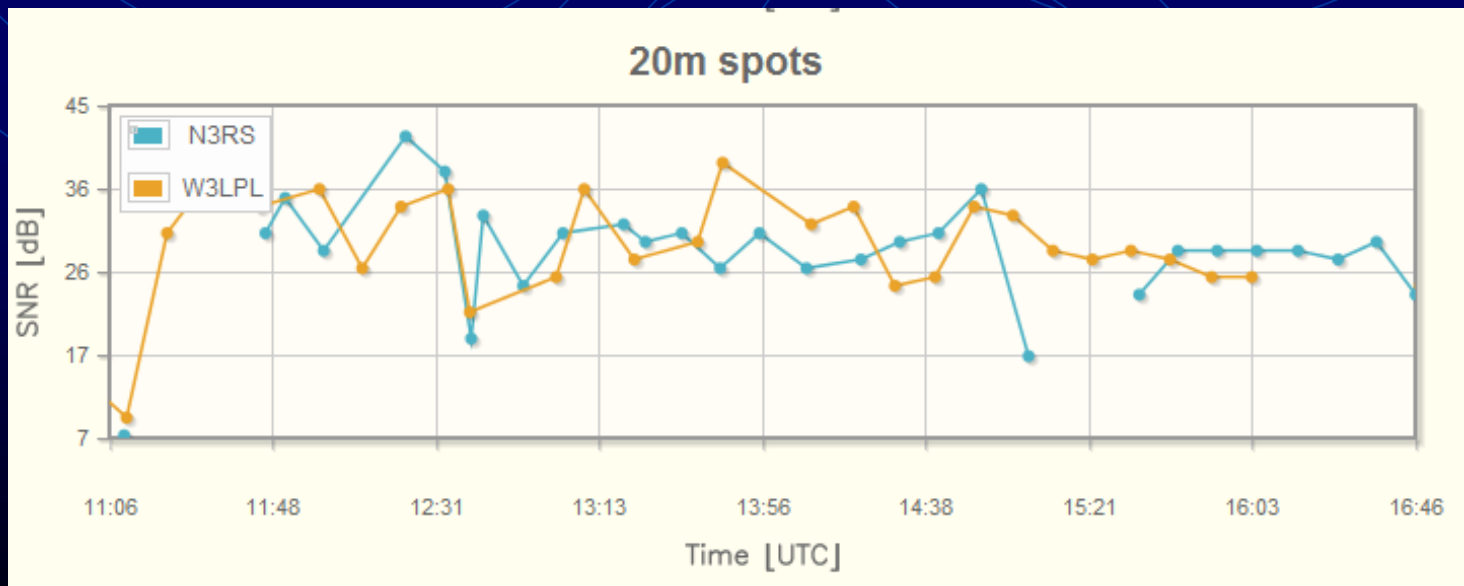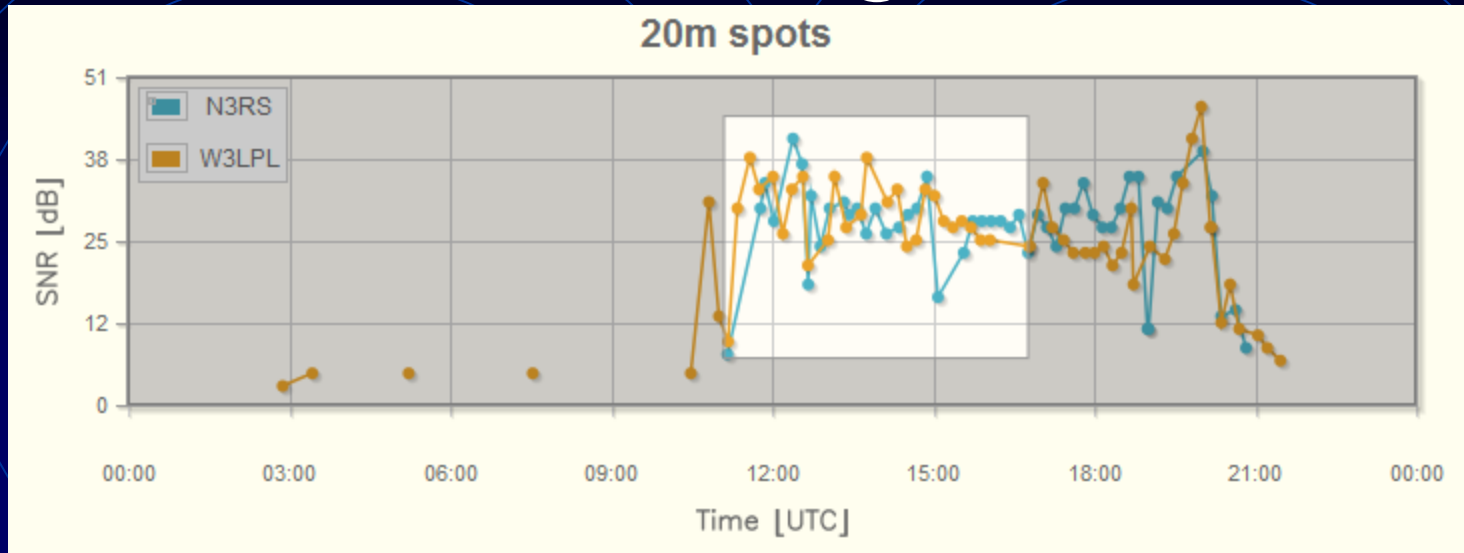
Antenna Tests

Send TEST or CQ twice, your call 2-3 times, and look for spots

KA9SWE	🇺🇸 N4ZR	14064.3	CW CQ [LoTW]	33 dB	27 wpm
K6XT	🇺🇸 N4ZR	14064.2	CW CQ [LoTW]	35 dB	27 wpm
K3LR	🇺🇸 N4ZR	14064.3	CW CQ [LoTW]	13 dB	27 wpm
N6NC	🇺🇸 N4ZR	14064.2	CW CQ [LoTW]	9 dB	27 wpm
N7TR	🇺🇸 N4ZR	14064.2	CW CQ [LoTW]	32 dB	27 wpm
PJ2T	🇺🇸 N4ZR	14064.2	CW CQ [LoTW]	11 dB	27 wpm

QSY a little, change antennas, and TEST again

VE6AO	🇺🇸 N4ZR	14064.2	CW CQ [LoTW]	25 dB	28 wpm
K4XD	🇺🇸 N4ZR	14062.8	CW CQ [LoTW]	10 dB	27 wpm
SK3W	🇺🇸 N4ZR	14062.8	CW CQ [LoTW]	9 dB	27 wpm
VE6AO	🇺🇸 N4ZR	14062.7	CW CQ [LoTW]	7 dB	27 wpm
N7TR	🇺🇸 N4ZR	14062.8	CW CQ [LoTW]	8 dB	27 wpm

www.reversebeacon.net/dxsd1/dxsd1.php?f=0&c=n4zr&t=dx

Pros and Cons of RBN Spots

- 100x as many spots as traditional spotting network

- Everything spotted, not just those judged as "rare"

- Duplicate spots (though not on CC Cluster) – Why?

- Too many busted spots, despite 99% accuracy per Skimmer, because there are so many Skimmers

- Callers identified as runners

- Occasional frequency "images" due to SDR setup problems.

How to Use It in Contests

- Find and connect to a "retail" server
- Choose your filtering strategy and apply at the cluster node as much as possible
  - Nearby nodes only
  - Nearby and east – see what's coming
  - Worldwide – approach favored by all-out multis

CT1BOH Filters

- Available on some AR Cluster V6 nodes
- Flag and can filter:
  - Busted spots
  - Callers misidentified as runners
  - Images from mis-adjusted receivers – two spots, same call, different frequencies
  - High-quality spots

Quality Tags

- ? - Not yet verified
- V - Verified by multiple spot/same frequency
- Q - QSY (may be real QSY or image)
- B - Busted (Likely real call in parens)

Compound filters (ARC V6)

SET DX FILTER skimmer AND skimvalid

SET DX FILTER call={MYCALL} OR (not skimmer and spottercont=NA) or ((skimmer and not skimbusted) AND (spotterstate=[WV,MD,VA,PA,NC]))

set dx filter call= {MYCALL} OR not skimmer AND (spotterstate=[WV,MD,VA,PA,NC]))

CCUser

How to Get Spotted More

- Use keywords and repeat your call
  - CQ, TEST
  - Repeat twice every ten minutes or less
  - Don't vary your speed
- Don't get that special exotic call
- Stay in first 91 KHz of each CW band
  - Why?

Why Prefixes Matter

- CW Skimmer validates callsigns it copies based on whether they are more or less plausible.

- If a prefix pattern is not listed, the maximum number of repetitions is required for each validation level

For Example

+ P40@ ...

P43@@

+ P43@ @ @

+ P44@

P48@ @

+ P49@

+ P49@ @

P5@

Near Real-time Propagation Info

ViewProp - Developed by ZL2HAM – Currently in beta

The Big New Idea

- Use RBN spots *to and from* an area you define to characterize propagation in near real time.

Continuous Charting

- Continuous charting of propagation for rolling 24 hour period – such as leading into a contest
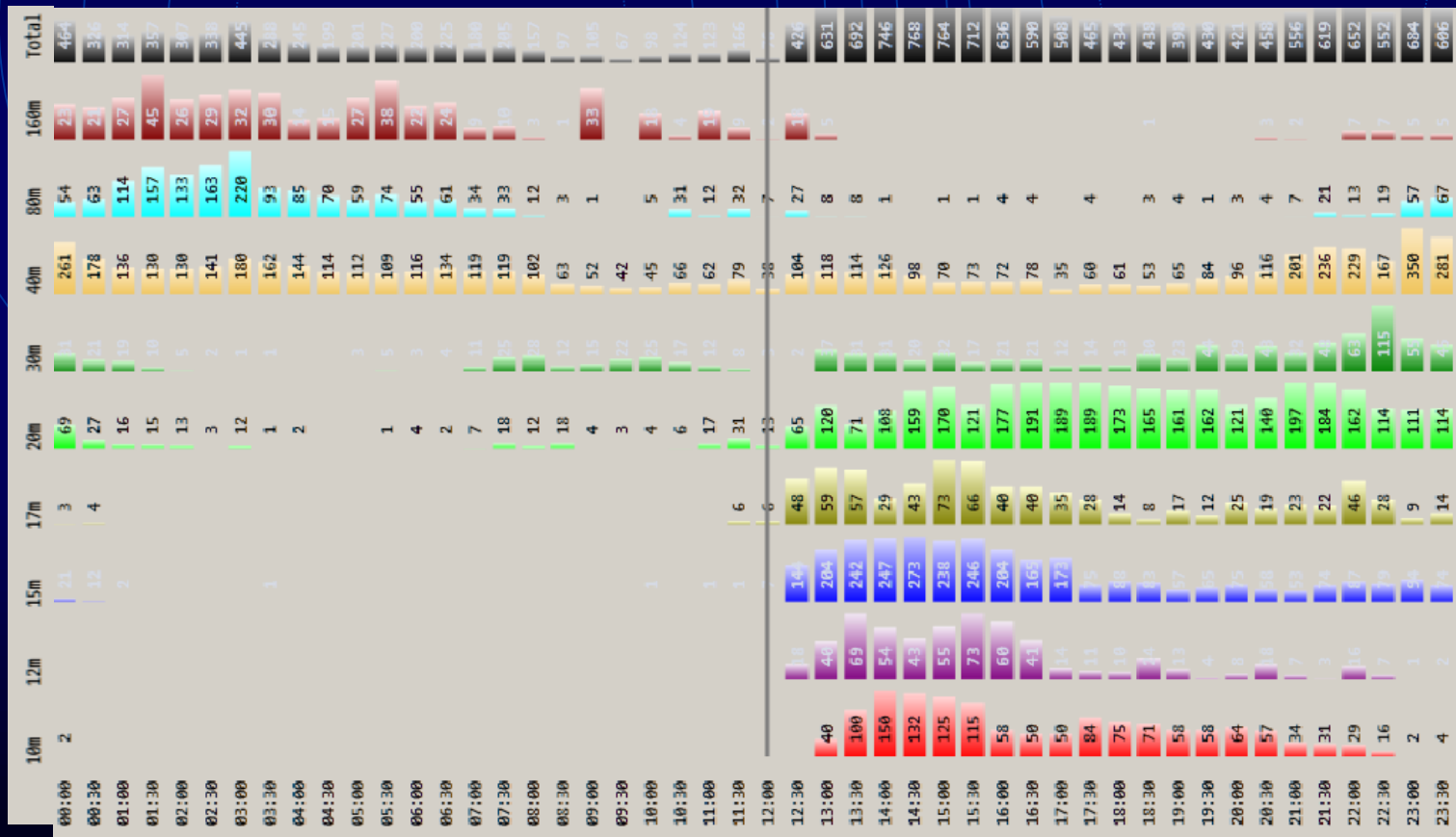
Zooming In

Other Key Features

- Ability to download and chart RBN data for any day in the past.

- Built-in Telnet server
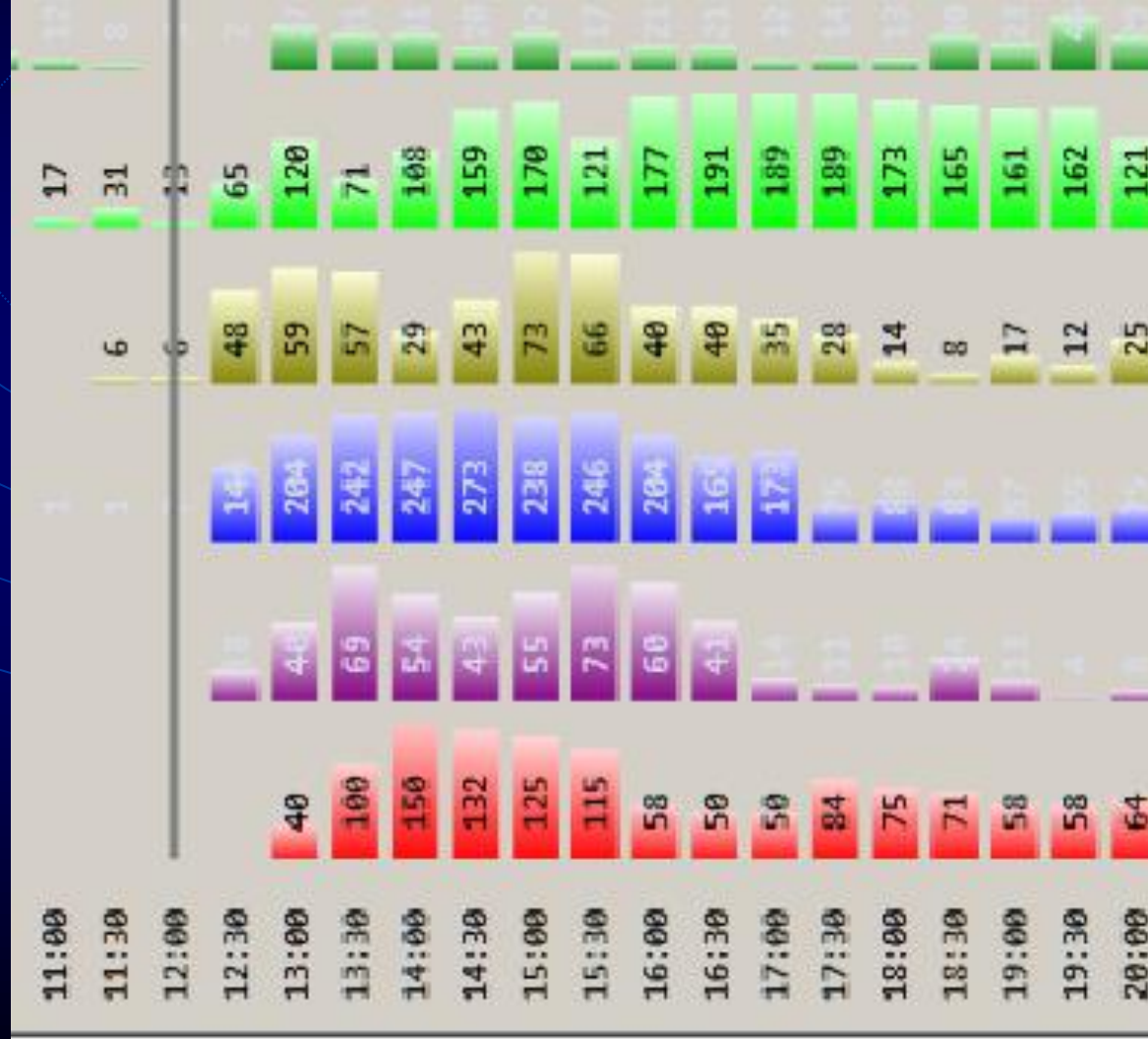 - Insert between any server with RBN spots and your logging program
  - Use ViewProp's filters to feed your logging program

What's Coming?

- RTTY Skimmer
- Using Softrocks to reduce cost of RBN participation, particularly for developing countries.
  - Support by Yasme Foundation, VE3NEA and KB9YIG

SoftRock/SkimScanSR Tests

- Using software to QSY Softrock Ensemble SDR to cover multiple bands
- Alternative to simultaneous coverage by QS1R – but for $100 instead of $850
- Comparative spot coverage seems about 70%

Resources

- RBN web site – http://reversebeacon.net
- RBN blog – http://reversebeacon.blogspot.com
- Tutorial - http://reversebeacon.blogspot.com/2013/12/a-new-tutorial-on-using-rbn.html
- Download of Aggregator – on the RBN web site
- More on ViewProp - http://zl2ham.wikispaces.com/
- Download Viewprop – https://groups.yahoo.com/neo/groups/viewprop/info(files section)
- ARCluster filters – http://ab5k.net/ArcDocsVer6/UserManual/ArcCmdSummary.htm
- CCUser - http://www.bcdxc.org/ve7cc/default.htm#prog
- Mailing lists:
  - skimmertalk@contesting.com
  - viewprop@yahoogroups.com
  - RBN-OPS@yahoogroups.com

- That's all folks!