

2005 and 2006 Activity Charts - Spring/Summer Sporadic “E” Season

Background Information - KA5DWI

A. Location – Grid Square EM12ju, northeast of Fort Worth, Texas.
The average sunrise around 11:30 UTC and sunset 02:30 UTC.

B. Terrain:

Older and wooded suburban neighborhood located in a creek valley.
Several hills are located 60 feet higher than my highest antenna from about ¼ to ½ miles north-northeast to east-northeast from the QTH. To the positive, only feeder power lines are above ground in the neighborhood.

C: Equipment

Primary Rig: Yaesu FT-747GX running 15-20 watts.

Primary Antenna: 3-Element Yagi @ 30 feet (35 year old CB antenna!!), fed with low loss RG8X (LMR250).

Secondary Rig: Radio Shack HTX-10 (receive only)

Secondary Antenna: Cushcraft ATV-3 vertical (25 year old antenna) fed with RG58.

Computer: Dell Dimension 4100 desktop,

1.0 GHz P3, 128 MB RAM running Windows ME, Creative Labs Soundcard, RigBlaster hooked to COM1.

D. Operating

1) Time:

Usually began operation at 12:00 UTC (7:00AM local CDT) and ended at 04:00 UTC (11:00PM local CDT) unless 10 Meters was still active.

2) Transmissions:

6 Times per hour (10 minutes). No transmissions if I was away for an extended period (once during Memorial Day holiday) or if the weather was threatening (very rare – in a severe drought).

3) Dates:

All data was created from April 27 for both 2005 and 2006 till August 11, 2205 and August 16, 2006 to represent an equal period before and after summer solstice.

4) Antenna Orientation:

Majority of operation was on the 3-Element Yagi pointed at 80 degrees azimuth. Direction was changed when conditions favored other areas.

5) Data:

All the listed data includes only 10-Meter captures and identified fragments (partials) from heard stations. I did not include other stations capturing my signal. Fragments were identified by importing the partial data into MS Excel, then using the “Filter” executable to pull out common sequences.

6) Errors:

Some will exist, but should not influence the overall results. The primary error was double captures (multiple channel IMD’s). A strong effort to delete them from fragments was attempted, although I am sure they do exist between partials and captures at the same time.

7) Problems:

I had to reconstruct Captures from several days due to the dropping of the data when the computer was used heavily for other processes (College Spanish class). I had to replace a flaky DSL Modem in early June.

E. Operating Experience

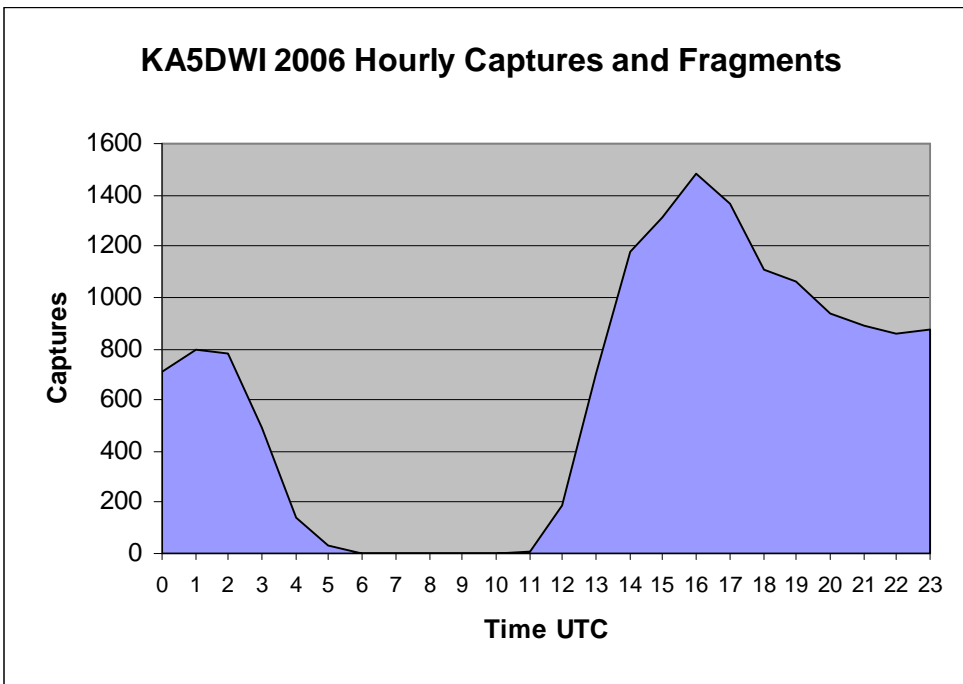
- 1) SWL listener since I was 12 years old (1964) “WPE5EWN” and had several friends that were CB’ers and Hams.
- 2) CB license, KBA-5229 in 1973 (all CB stuff makes good 10 Meter conversions!!!)
- 3) I have been a Ham since early 1979 (I moved into a home owned by a Ham). I have held the same call since the original license.
- 4) Accomplishments.
 - a) “Worked All States” in December of 1979.
10-Meter “Worked All States” in May 1986.
 - b) Worked W00RE on the Spacecraft Columbia in 1990 (FM), plus some AX.25 with Columbia. A few voice QSO’s with MIR.
 - c) “First Day” Oscar-13 Mode B QSO in 1988.
 - d) Worked 7Q7 (Malawi) on 6 Meters with 10 watts into a 3 element Yagi.
 - e) Completed a 750 km Tropo QSO on 2 Meter SSB with 2.5 watts into a 4 element Yagi fed with RG58.
 - f) 6 Meter VUCC #295 in 4/88 (worked in 18 hours), currently 490+ grid squares, 57 countries and 49 States (can’t work RI!!).
2 Meter VUCC #237 4/88 (worked in 4 years), currently 191 grid squares, 42 States.
 - g) Only Contest Certificate – 1st Place North Texas Section, 1994 ARRL Sweepstakes for QRP.
 - h) Worked over 150 countries on 10 Meters.
 - i) DX Record: Set one half of the North American Continental “Over- Land Tropo” record for 2 Meters with K1WHS FN43 Maine (just short of 1600 miles) in September 2003.
- 5) Numbers held:
AMSAT #809, SWOT # 2497, ARCI QRP #8247, 10-10X #40849
- 6) Positions Held: Past Bulletin Editor, current Chairman Sidewinders-on- Two Radio Club (SWOT): www.swotrc.net

F. Strong Opinions

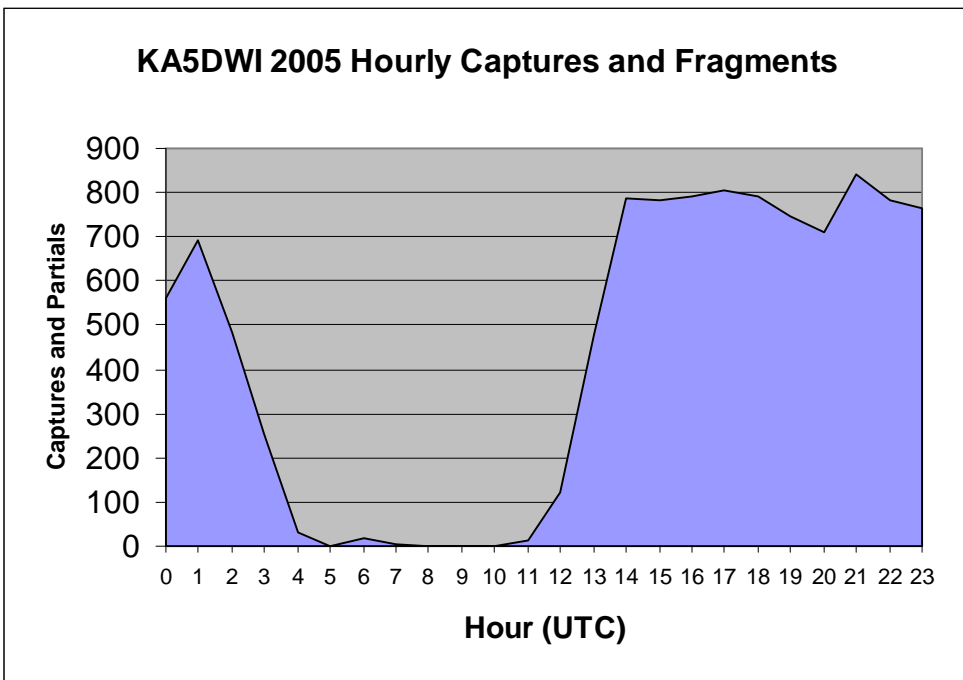
- 1) Yes !!!! You cannot be an expert to any phenomena unless you take a serious and dedicated effort to experience it first. The great thing about PropNet is experience.
- 2) Sporadic Es are “*seasonal*” **first**. (about 8 weeks each side of the summer solstice and 4 weeks each side of the winter solstice). Activity incidents and intensity follow a “right-tailed” bell shaped curve around the summer solstice (Peaks quickly, declines slowly). The decline is what needs investigation **Second**, it is affected by solar and geomagnetic conditions. **Third**, weather conditions can have only a “local” influence and have absolutely nothing to do with its generation. The vast majority of “E” activity is clear air.

Enjoy and please use this information as you wish, except for a college thesis paper.

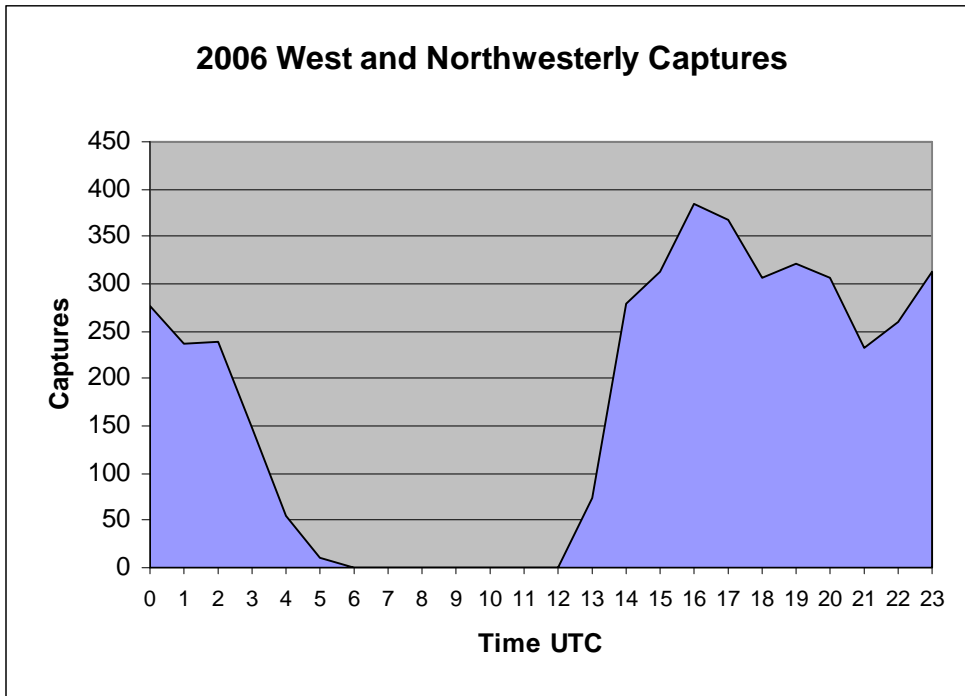
The following charts are for the actual captures and call identified fragments, by hour received between April 27 and August 11 or 15 for both 2005 and 2006. These days are about the same numbers of days before and after the summer solstice.



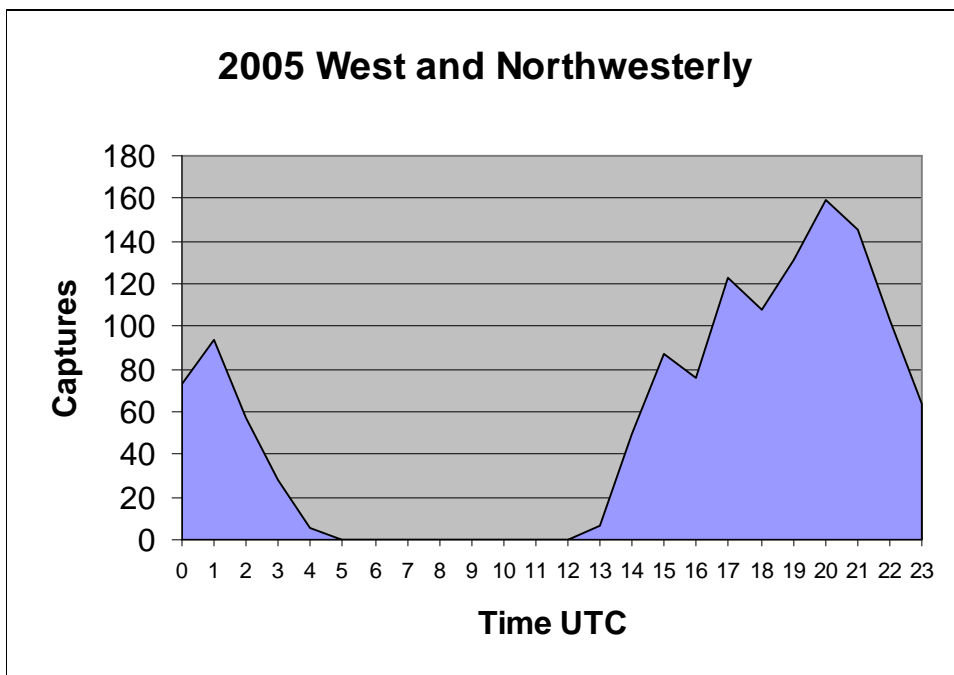
The data acquired and displayed in 2006 seemed to follow the more acceptable trends to be expected during the Spring/Summer Es Season. Two peaks of activity occur each day (late morning & early evening). One surprise was that afternoon daytime activity was always high in both years. On the other hand, evening activity was much lower than expected compared to the daytime.



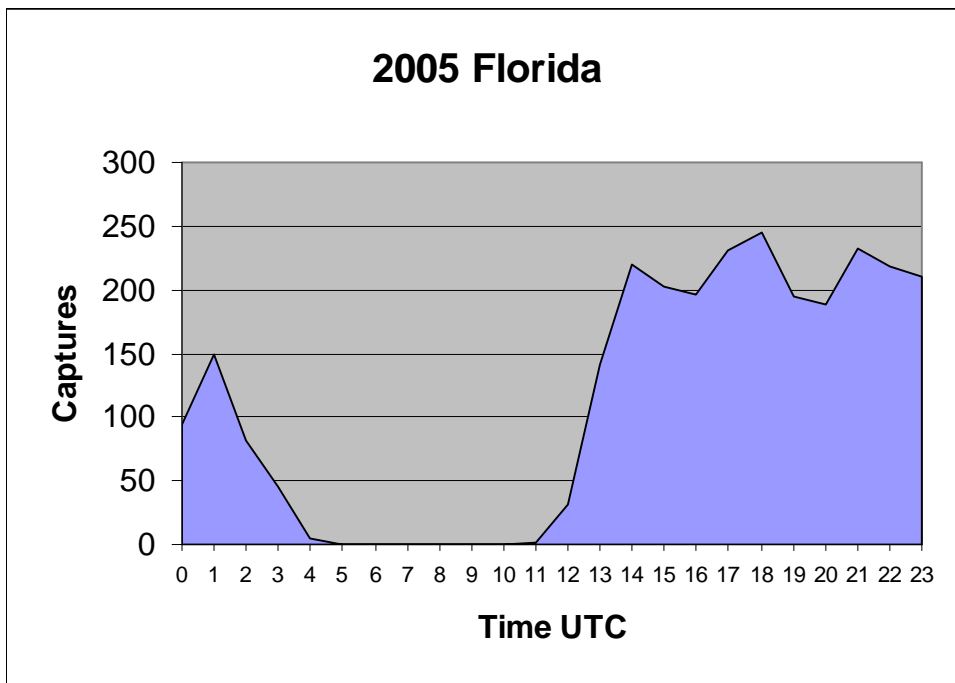
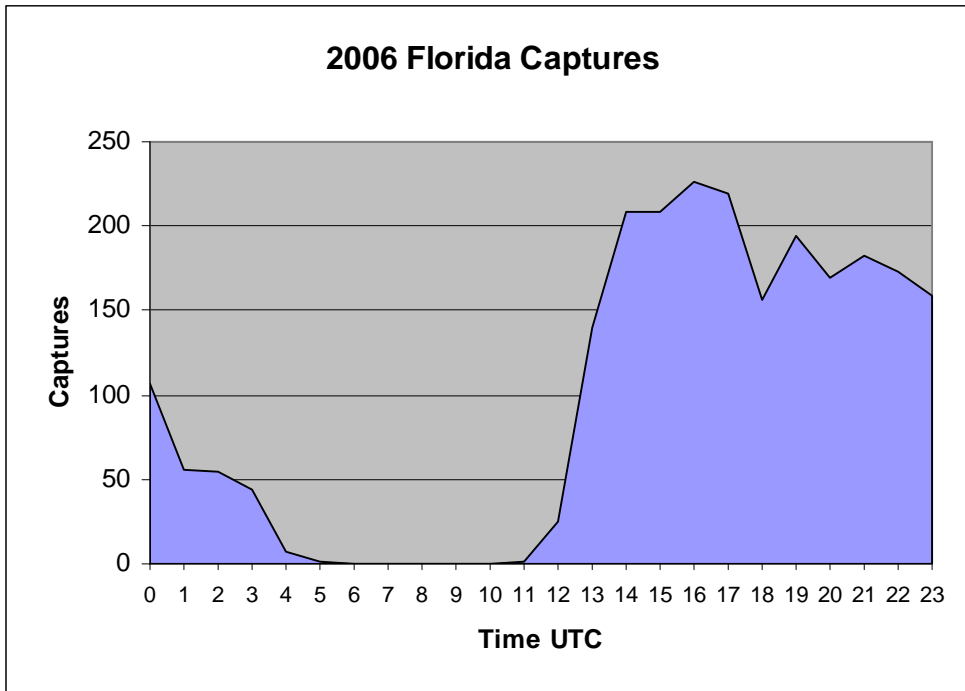
These charts represented a fairly significant difference between these two years. The 2006 data followed the overall trends of the year. I was surprised that activity dropped off after 2300 UTC in 2006. The 2005 pattern would have seemed to be more expected.



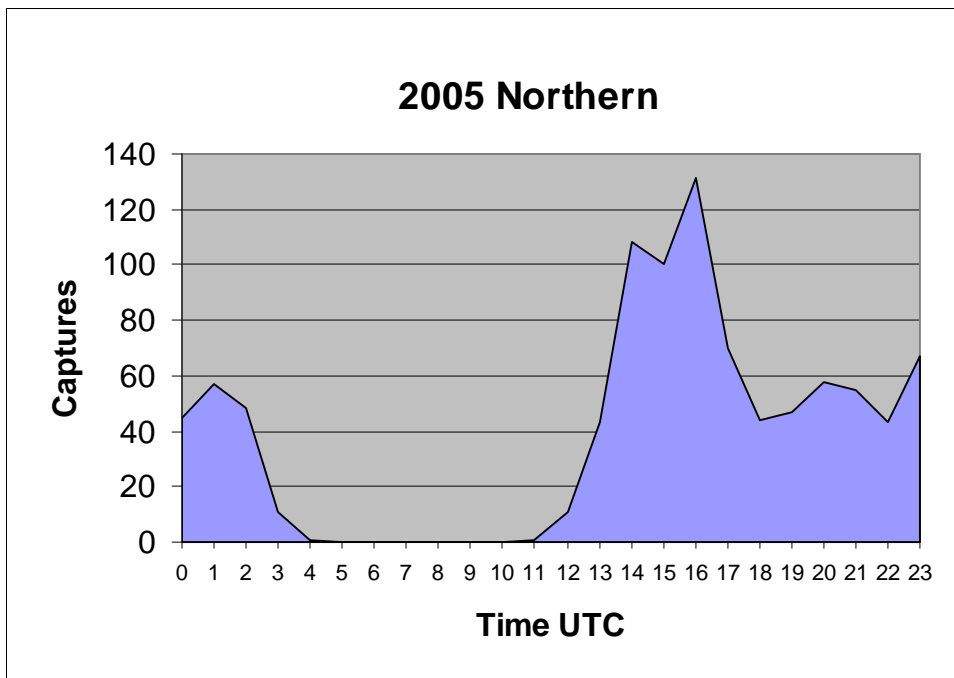
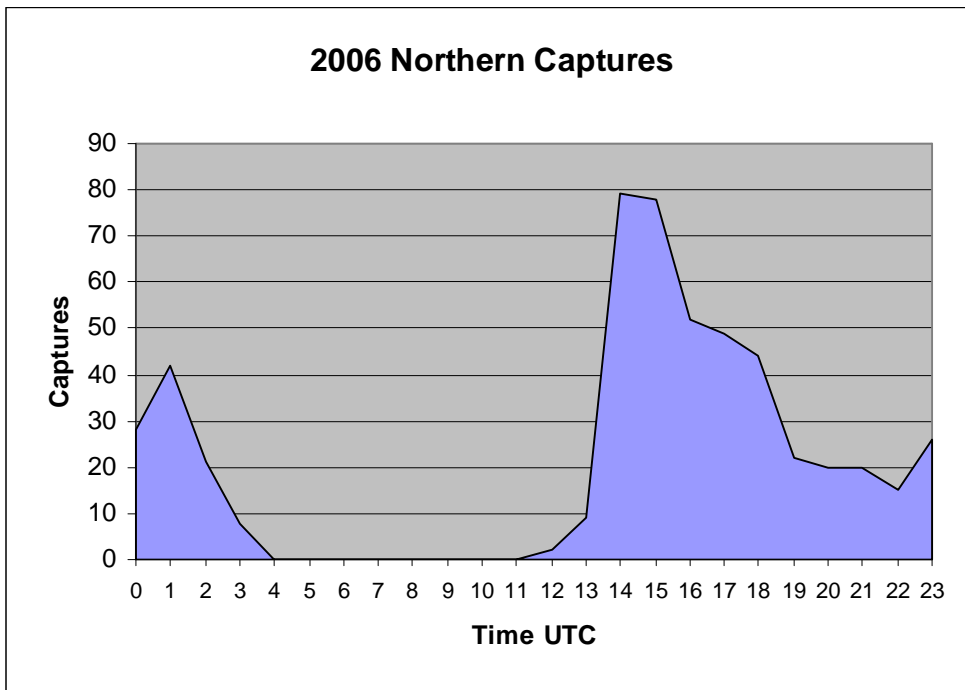
In 2006, additional signals from KC6QJO helped influence the overall total. In 2005, I had a prolonged dry spell of captured signals from the west in the middle of the Es season.



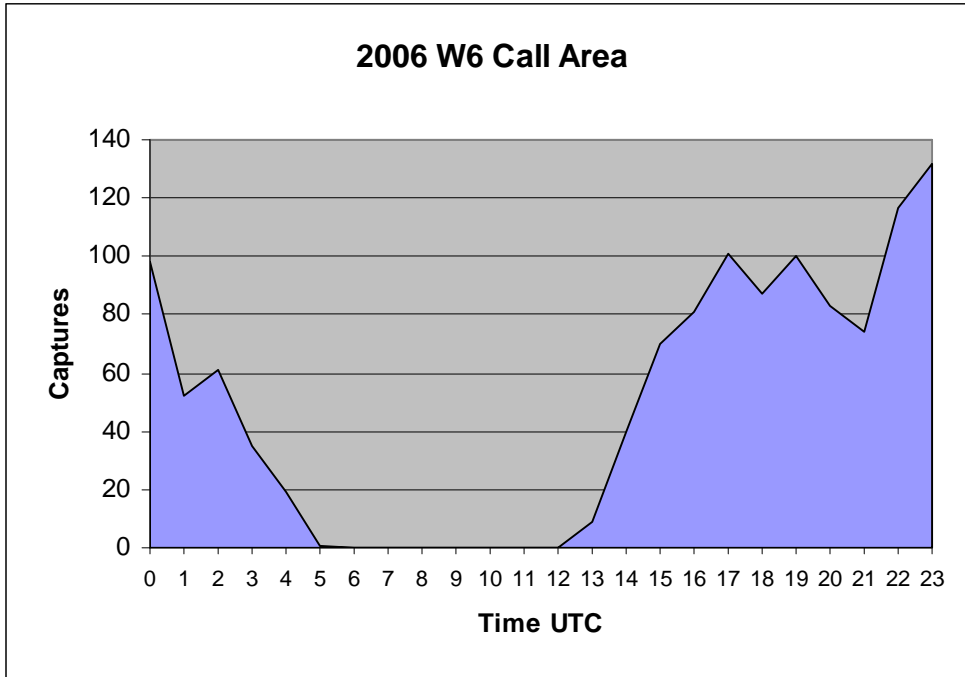
For both years, the captures from Florida represented the overall results to all areas. Had AD4RX not taken a short vacation in 2006, the figures probably would have equal to, if not a little better than 2005.



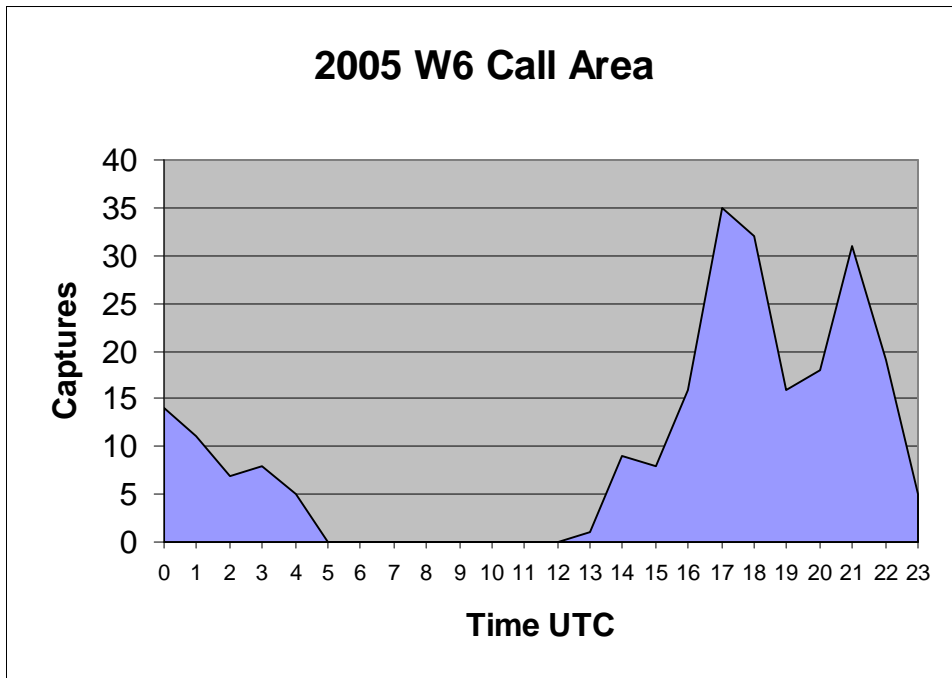
Once again, a change in participants between both years influenced the final results. Still in both years, propagation strongly peaks during the late morning hours (14-1600 UTC). This appears to be the only direction from my QTH with close similarity from both years.



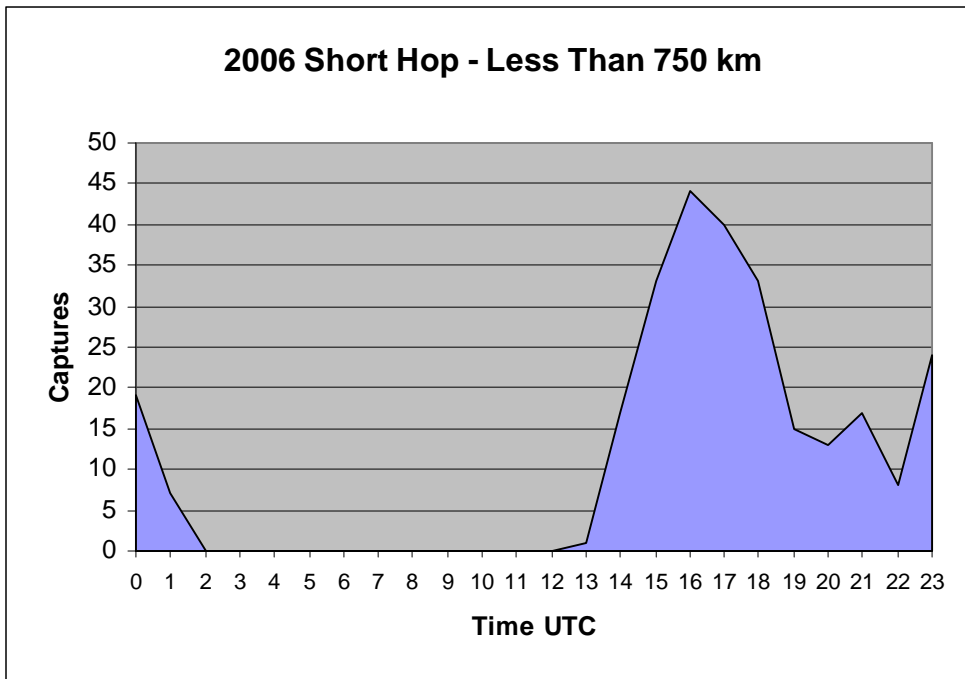
As mentioned earlier, KC6QJO appearance greatly influenced 2006. Still, there were some similarities when removing KC6QJO's data.



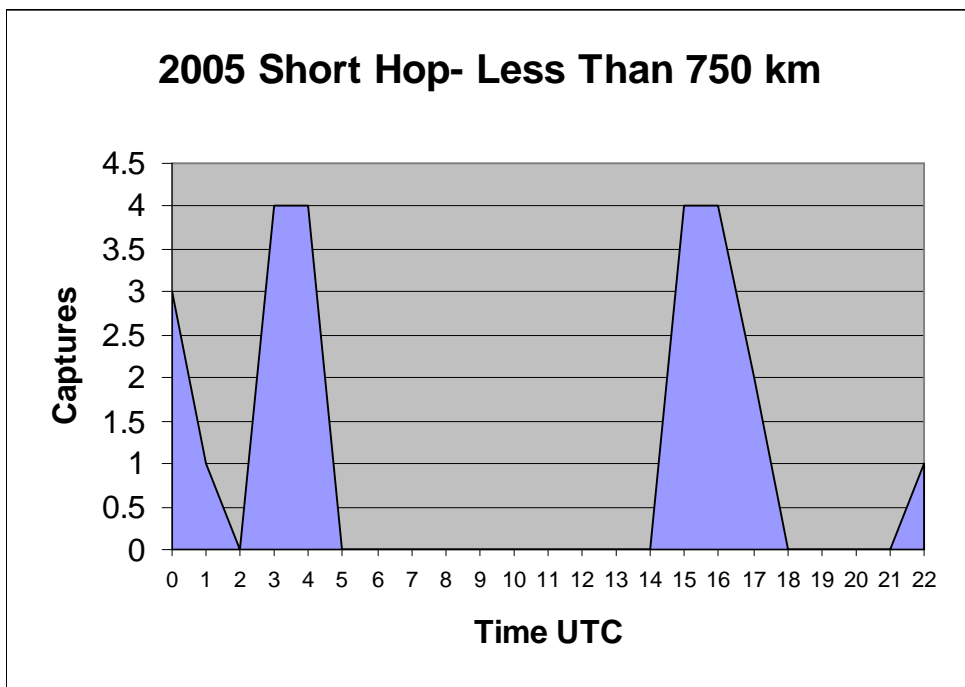
Note the late morning and early afternoon peaks in both years.



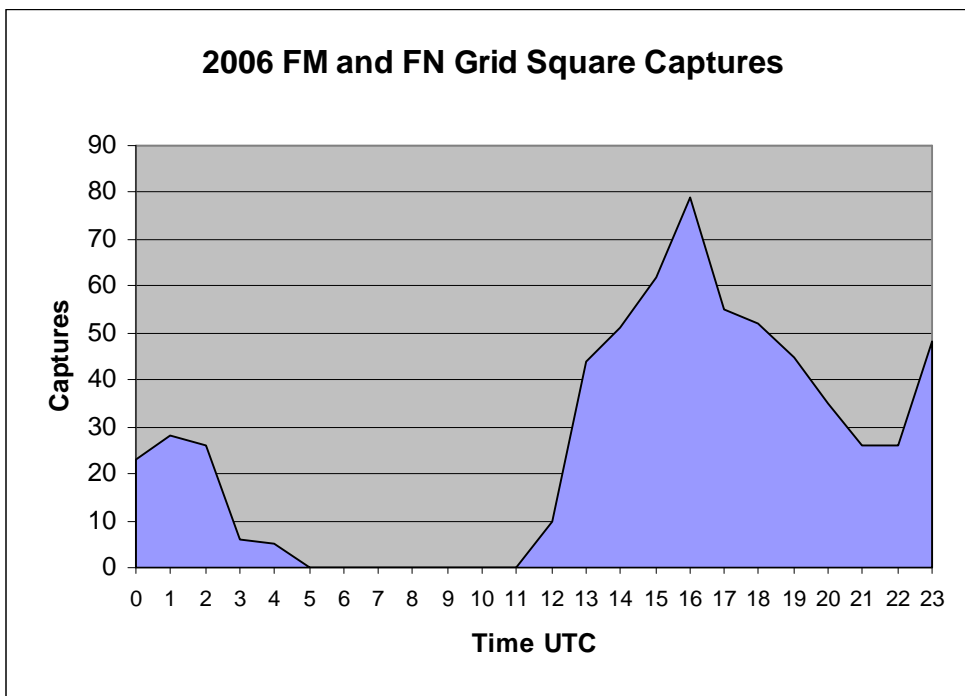
Short Hops on lower frequencies indicates that the MUF of the E clouds have risen and that the opening is more intense.



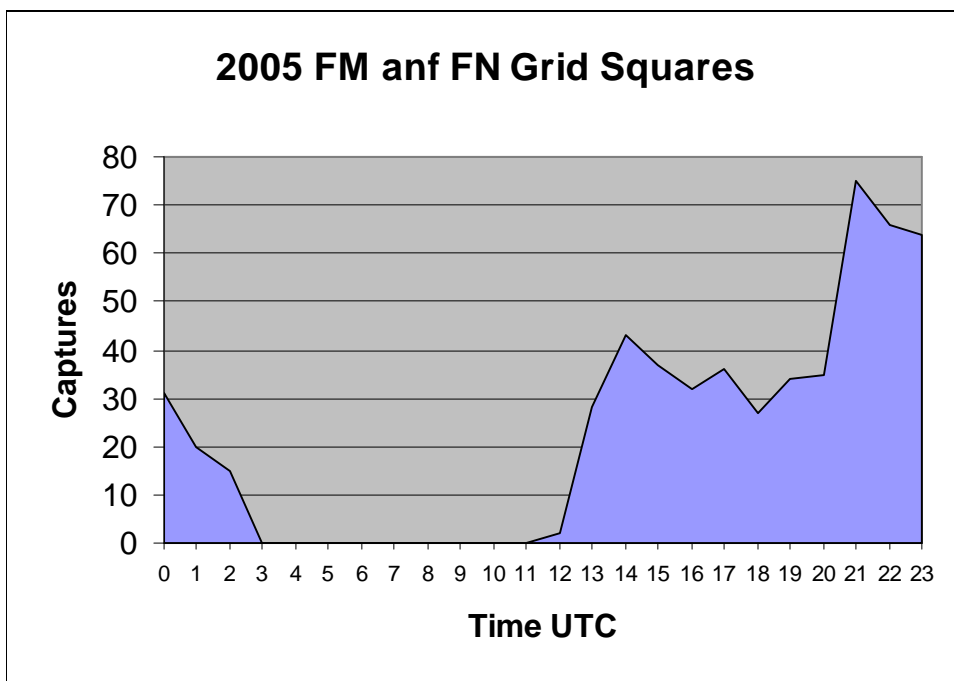
The totals for 2006 were much higher with appearance of KC0TLN and KD5CFB. Unfortunately, a complete lack of 2 Meter E Openings occurred at this QTH this year. It would have been interesting to compare these numbers to 2 Meter Es activity had 2 Meter Es occurred.



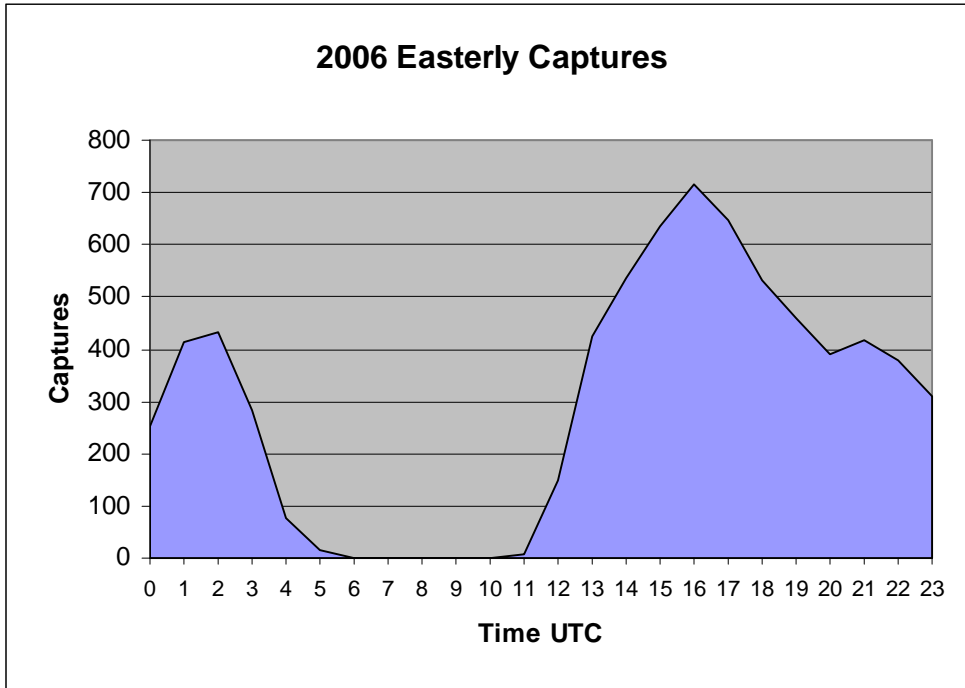
These results were quite interesting as there was a good increase of activity in the morning followed with a decrease during the afternoon. The captures encompass the northeast corner of the United States. It does not include FM grid squares in North Carolina.



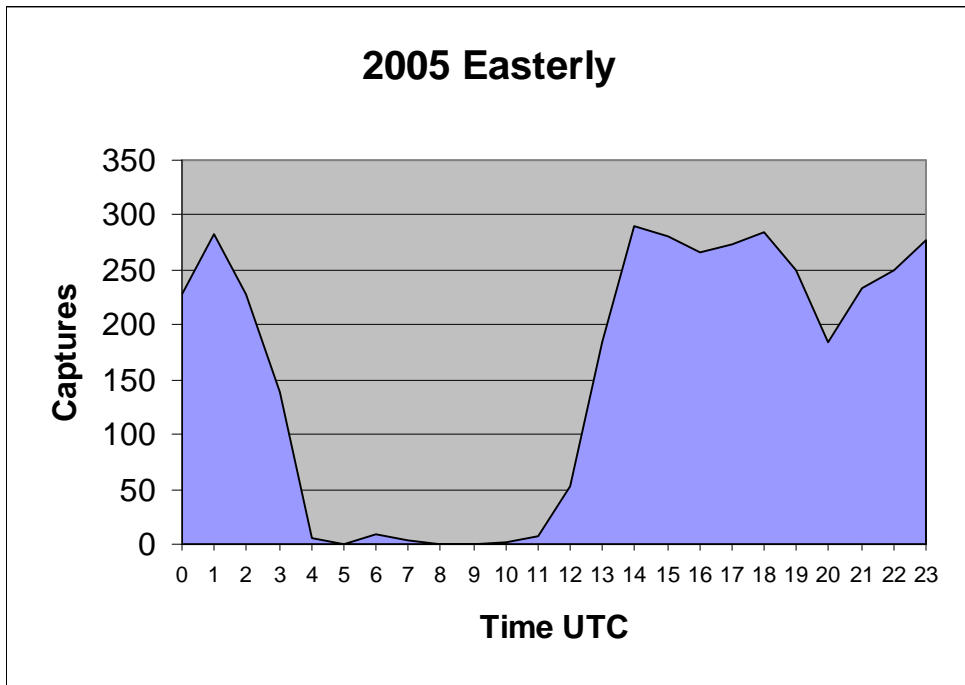
2006 Afternoon decrease and 2005, afternoon increase,



These captures are from all stations in Georgia, South Carolina and North Carolina.



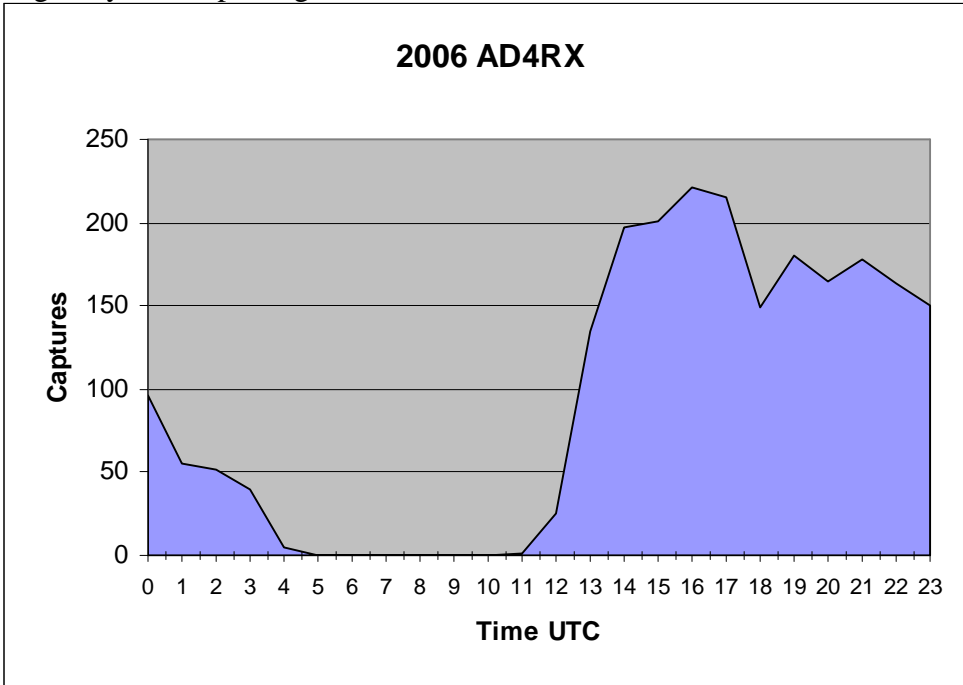
For both years, the trends shown in the chart for easterly captures closely represented the overall trends. If an active propagation period was to occur, conditions were excellent to the east.



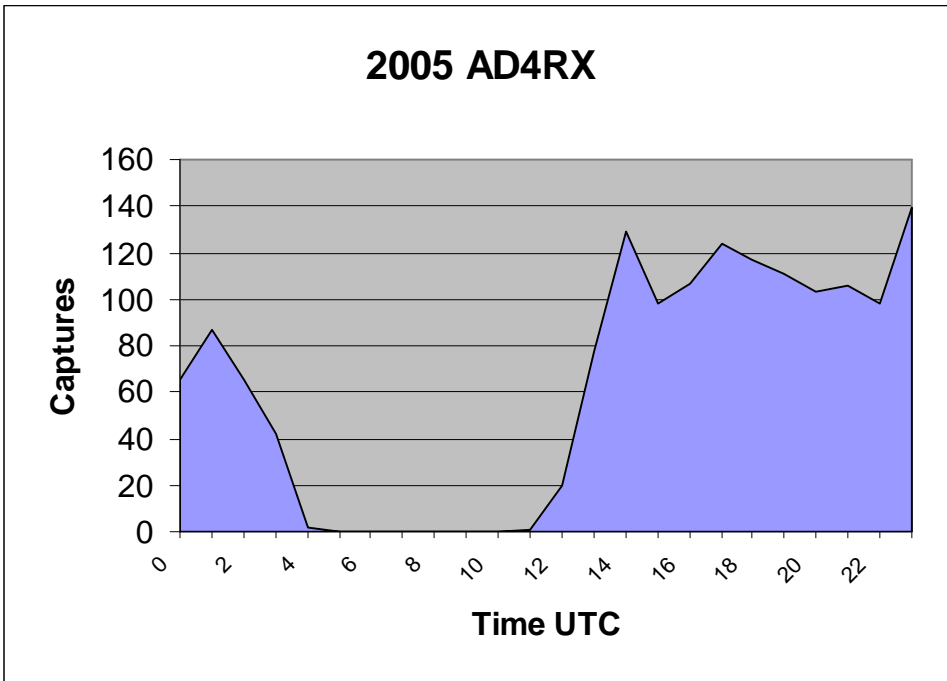
Note:

All individual stations charted were captured at least 500 times during the Sporadic “E” season.

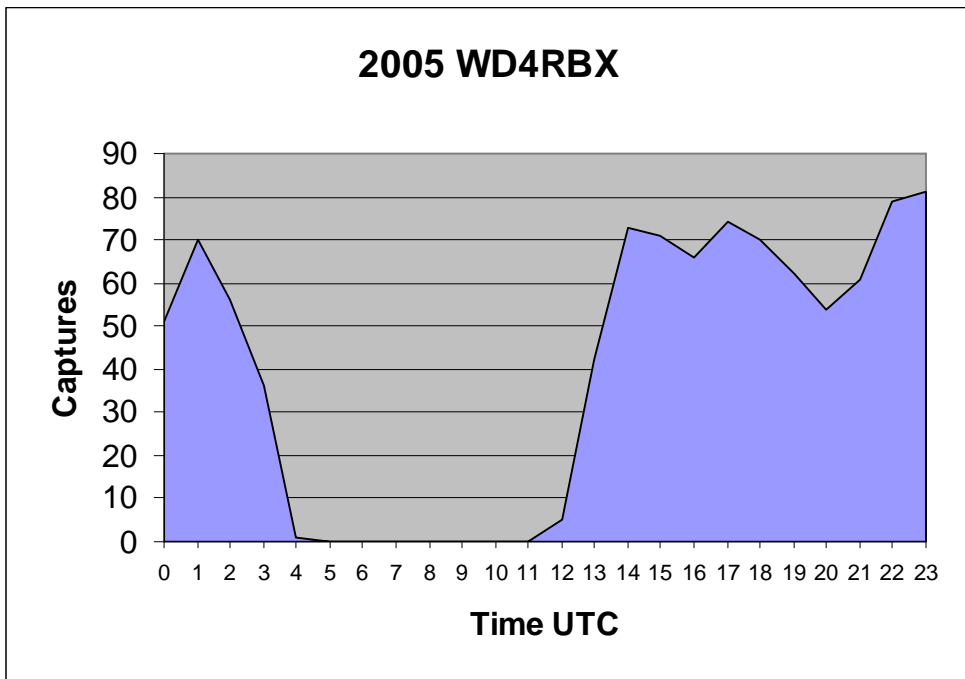
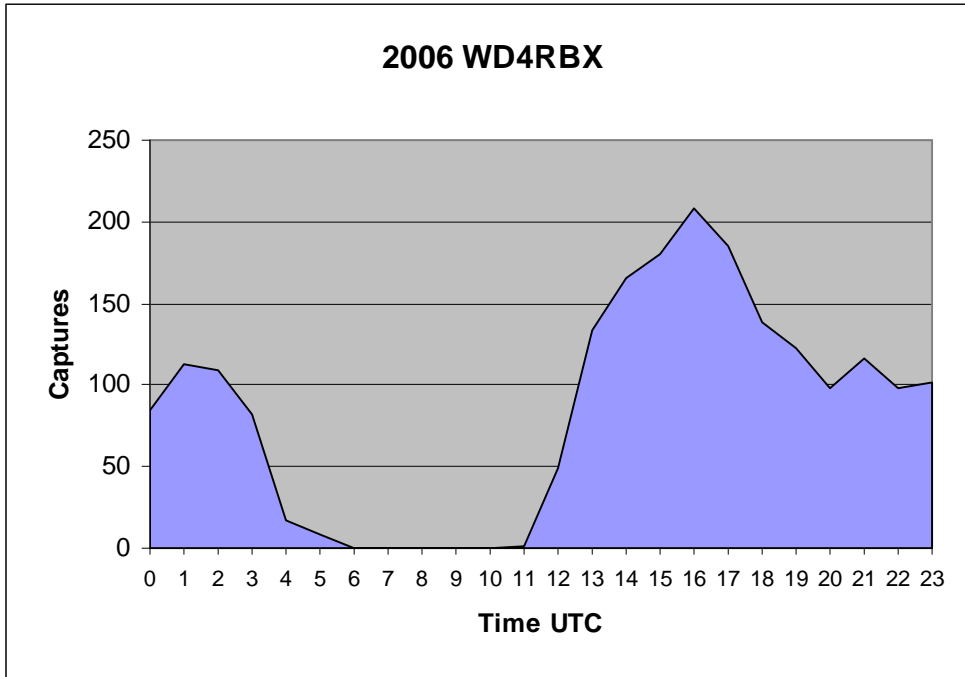
AD4RX is one of several stations I could always depend on. Many good openings have begun by first capturing AD4RX.



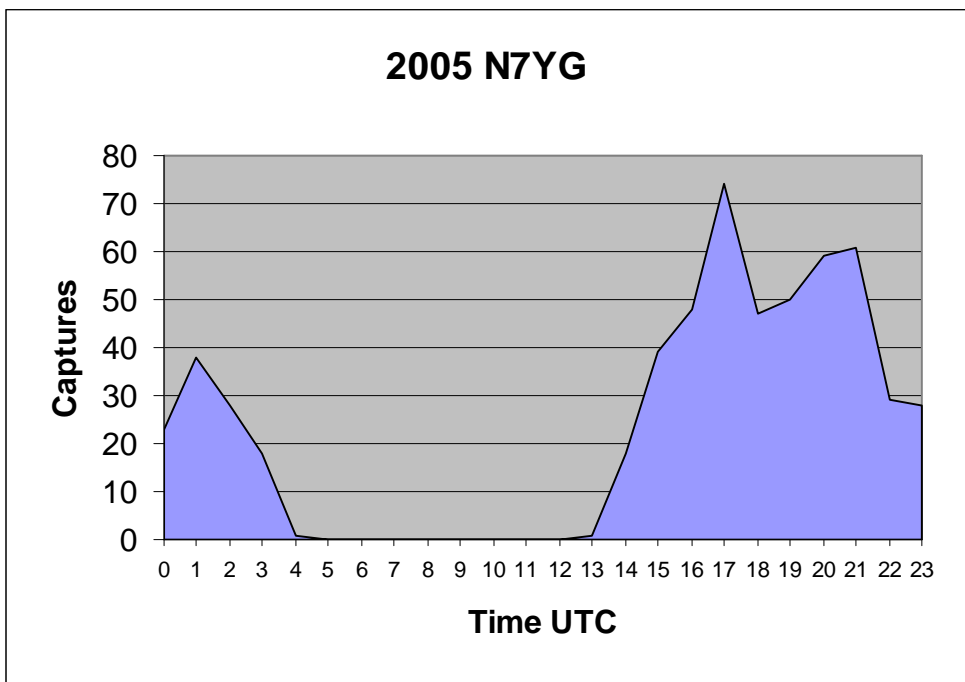
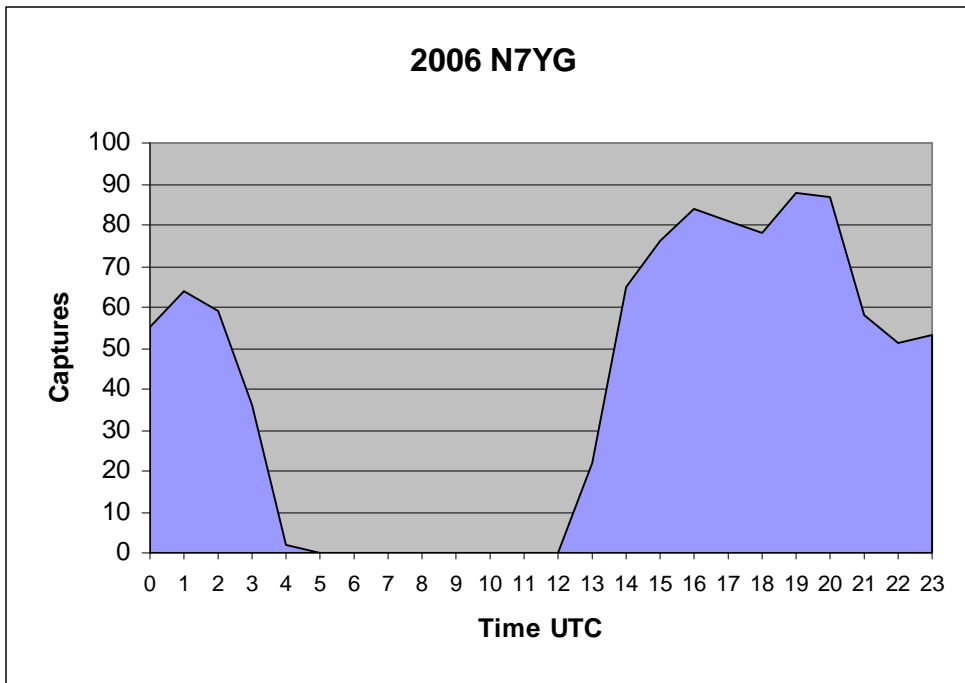
Both charts from AD4RX represented the overall activity.



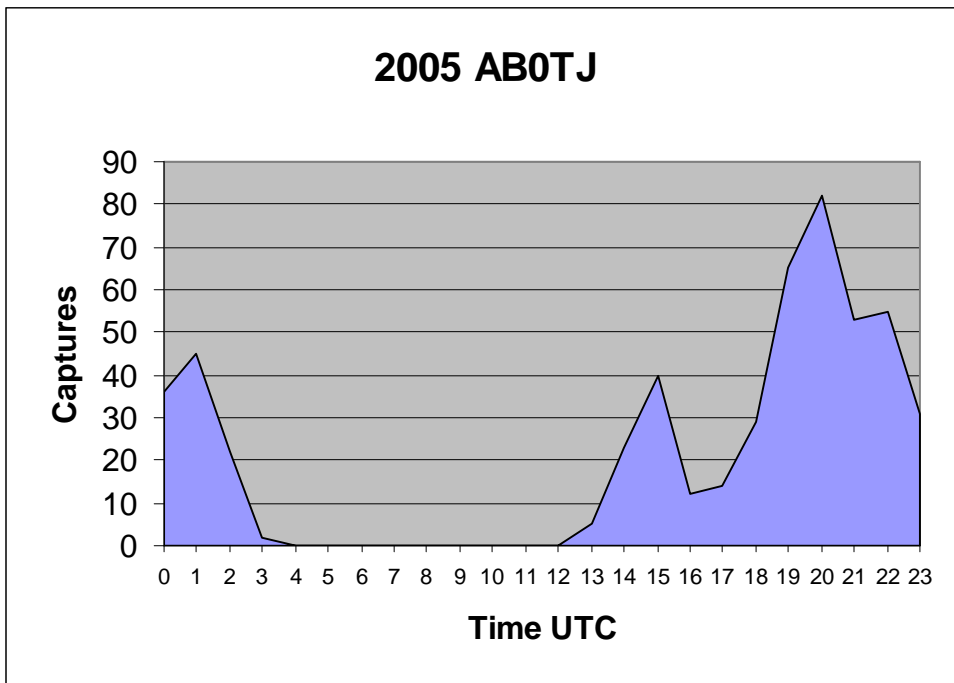
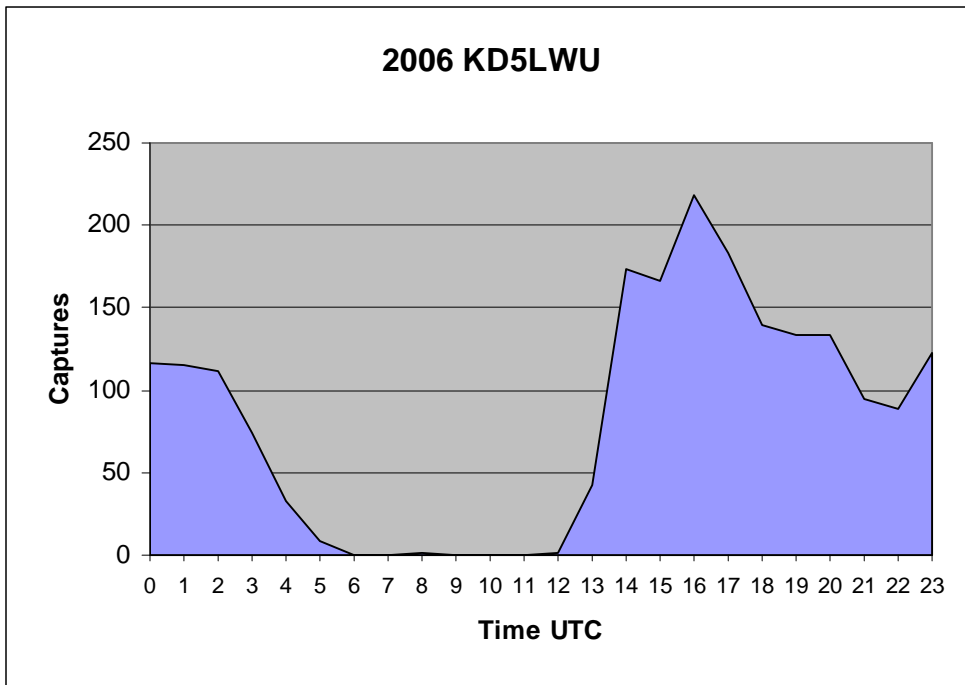
Likewise, WD4RBX captures were also representative.



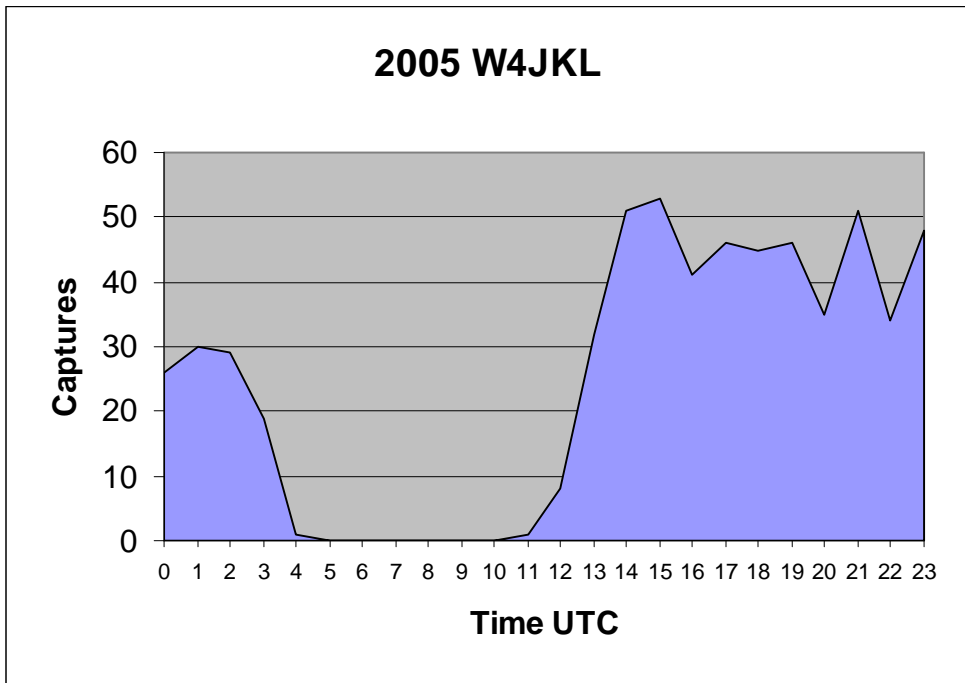
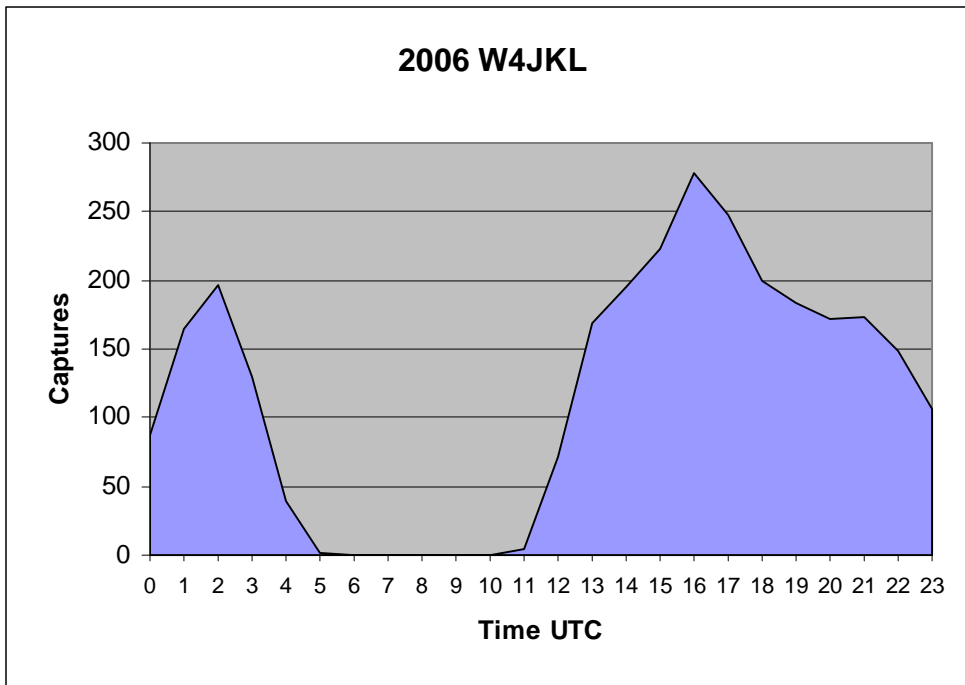
As mentioned earlier, I had an extended dry spell out of the west in 2005. 2006 was a much better year.



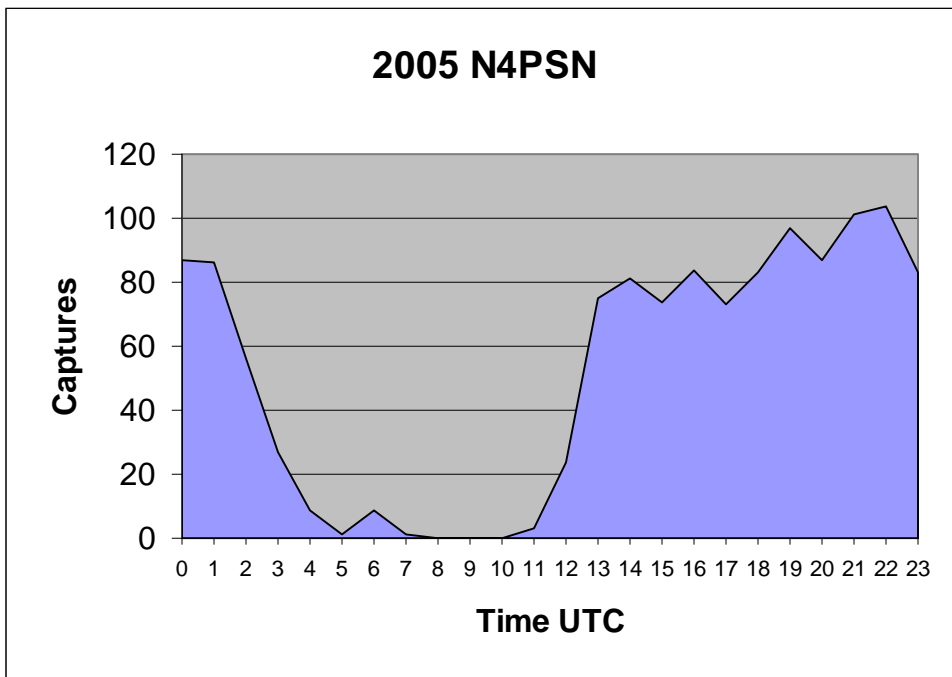
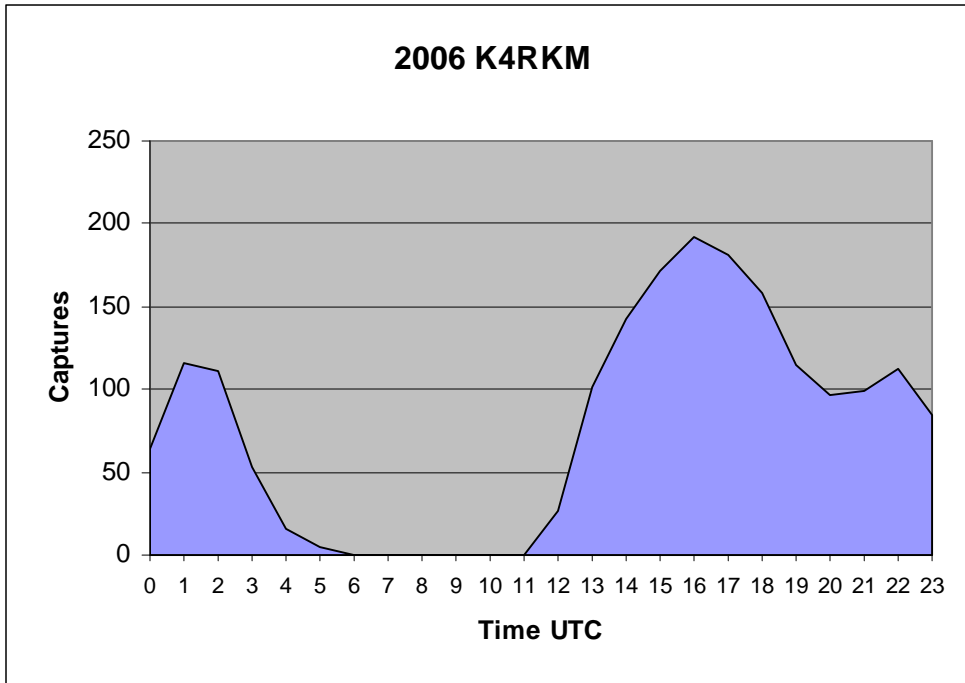
Having the “Reverend” join us this year was a welcomed, appreciated, and “blessed” addition after the disappearance of AB0TJ. He maintained a reliable beacon out west.



W4JKL was a measure of consistency while he was active. Most days this station was the first and last one captured.

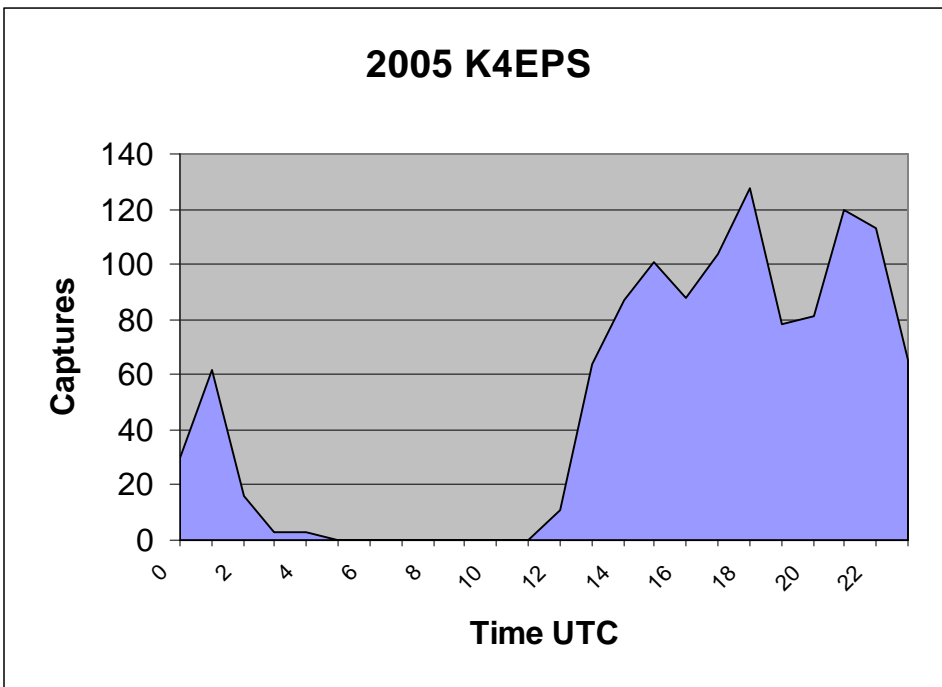
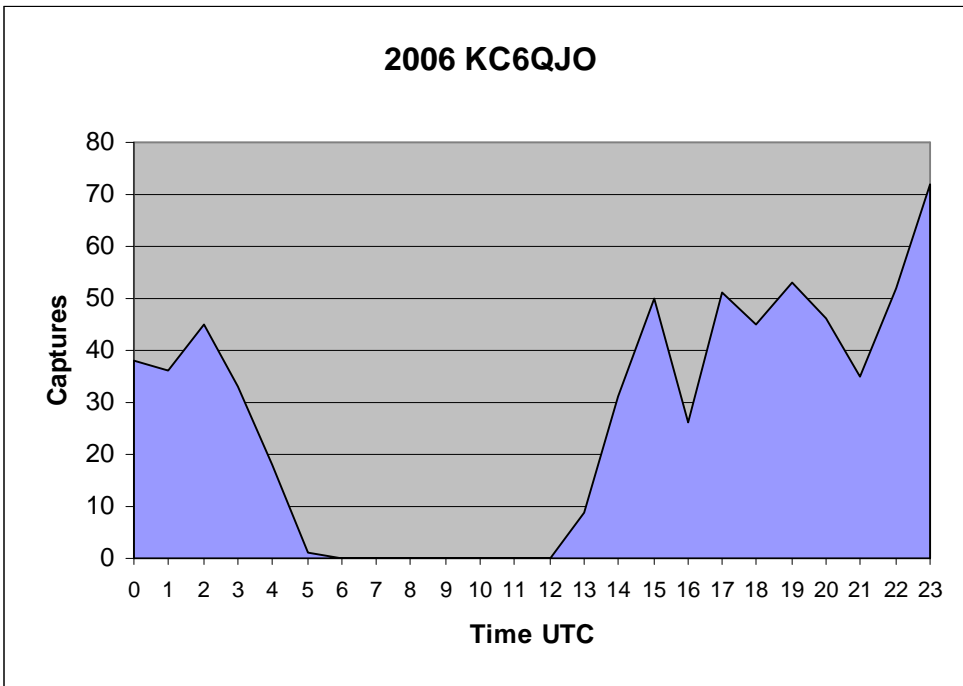


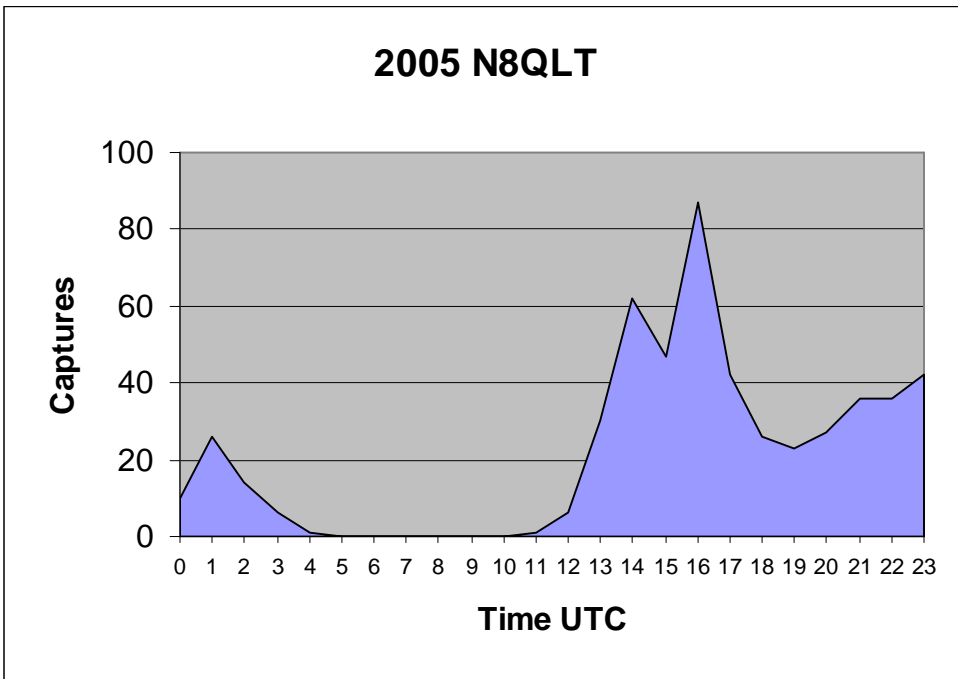
Two fairly close stations that made appearances in different years. Both signals were representative of the overall trend for the year.



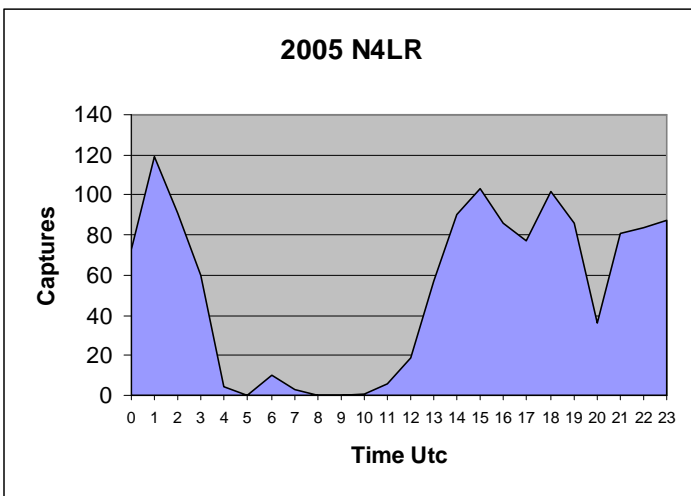
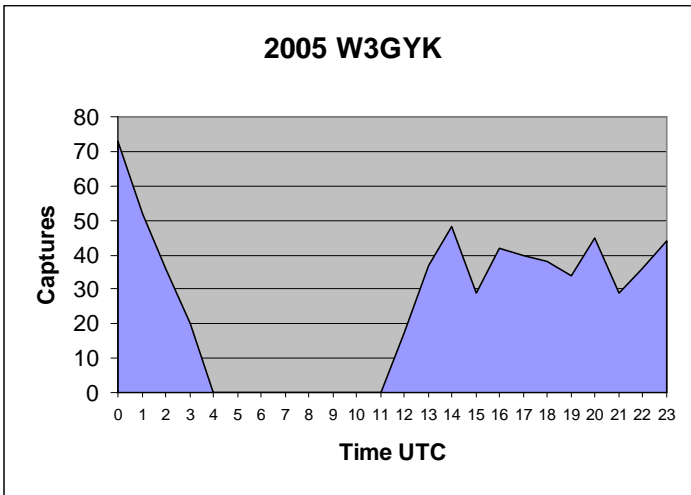
Other influential signals:

The appearance of KC6QJO highly influenced the totals from the west in 2006. K4EPS and N8QLT concentrated on 6 Meters in 2006 and were much appreciated signals there, Still, they were missed on 10 Meters this year.





Honorable Mentions from 2005 in Georgia and North Carolina, not or not as active in 2006.



Total captures and fragments:

Totals 2006				
Call	Grid Sq.	Azm	Dist. Km	Total Captures
AD4RX	EL88OD	110	1475	2228
AI4G	EM86IT	67	1346	4
K0OG	EM47CW	40	747	12
K1UY	FN43PB	56	2577	4
K4EPS	EL86UW	114	1579	83
K4RKM	EM85VF	79	1405	1845
K5GM	EM10DI	189	281	1
K9OHI	EM92XU	90	1602	52
KC0TLN	EM28QX	18	719	233
KC6QJO	DM05KH	277	2035	641
KC9ECI	EN44HB	22	1344	13
KD5CFB	EM40IQ	113	608	221
KD5LWU	DM57RI	295	1144	1958
KF6XA	DM13JO	272	1860	306
KN4LF	EL97AW	110	1559	22
KR1ST	EM92WX	89	1593	35
KT2Q	FN30JV	67	2309	10
N1EO	FN43GG	55	2556	8
N1NAF	FN54EM	53	2711	4
N2JR	FM18CO	69	1862	85
N4LR	EM73QN	86	1172	351
N5XYO	DM90QQ	233	402	25
N7YG	DM42NF	266	1282	959
N8QLT	EN82HL	48	1617	185
NH7C	FM19KB	63	1934	3
VE3FAL	EN58HH	20	1838	69
W2EV	FN03XD	55	2026	39
W3NRG	DM12JQ	269	1868	213
W4JKL	EM84AK	81	1238	2789
W9NWR	EN55FW	24	1594	5
WB2JEP	FM29LV	68	2129	80
WB7AJP	CN87WL	307	2656	40
WD4RBX	EM84NN	81	1338	2009
WN3C	FM19QC	69	1975	388
WU9Q	EN41RL	31	1124	3
TOTAL				14923

2005 Totals				
Call	Grid Sq.	Azm	Dist	Captures
AB0TJ	DN60CN	315	1277	514
AD4RX	EL88OD	110	1475	1491
K4EPS	EL86UW	114	1579	1154
KC4TXC	EM84KP	102	1140	27
KC9ECI	EN44HB	22	1344	90
KF6XA	DM13JO	272	1860	192
N1NAF	FN54EM	53	2711	7
N4LR	EM73QN	86	1172	1275
N4PSN	EM84KP	77	1319	1245
N5XYO	DM90QQ	233	402	22
N7YG	DM42NF	266	1282	562
N8QLT	EN82HL	48	1617	522
NH7C	FM19KB	63	1934	61
NK8Q	FN20GN	60	2117	153
W2EV	FN03XD	55	2026	153
W3GYK	EM85VF	75	1409	620
W3NRG	DM12JQ	269	1868	43
W4JKL	EM84AK	81	1238	596
W8TAH	EN91BD	52	1644	1
WB8SKP	EN66TD	29	1747	322
WD4KPD	FM15LM	75	1879	25
WD4RBX	EM84NN	81	1338	952
K4RKM	EM85VF	79	1405	236
KG4BNP	EM70SI	100	1241	16
K5GM	EM10DI	189	281	2
N1EO	FN43GG	55	2556	1
W0NKA	EN34IH	14	1321	4
W3BNY	FM18SG	66	1971	11
WB2JEP	FM29LV	68	2129	9
WN3C	FM19QC	69	1975	151
TOTAL				10457

Easy Overall Conclusion: No two years are similar yet. We still need more data. The best data is acquired is by monitoring stations that are always reliable. As one goes, so seems the rest of the activity across the country.

Adding a third year should now draw better conclusions as well as merging this data into one set.

Thank you all for putting a signal on. I look forward to more 2007 fun and participation.

73's

Art Jackson KA5DWI