

MOUNTAIN SPARK GAPS

NPARC—The Radio Club for the
Watchung Mountain Area



Website: <http://www.nparc.org>
Club Calls: N2XJ, W2FMI

VOLUME 49 NO. 7 July, 2014

UPCOMING EVENTS

Regular Meetings
8/13 and 8/25
Mon. 7:30
NP Senior Citizens Center

**See the club website (www.nparc.org)
for field day pictures plus a movie of
the tower raising.**

Meeting Schedule

Regular Meeting: 7:30—9:00 PM
2nd Monday of each month at the
Salt Brook School Cafeteria
Springfield Ave. and Maple St.
New Providence

Informal Project Meeting: 7:30—9:00 PM
4th Monday of each month at the
Salt Brook School Cafeteria
Springfield Ave. and Maple St.
New Providence

Everyone is Welcome

If a normal meeting night is a holiday,
we usually meet the following night.
Call the contacts below.
When Schools are closed,
meetings are held At the NP Senior
Citizen Center

Club Officers for 2014

President: K2MUN David Berkley
908-500-9740
Vice President: KC2WUF David Bean
973-747-6116
Secretary: KD2EKN Tim Farrell
908-244-6202
Treasurer: K2YG Dave Barr
908-277-4283
Activities: W2PTP Paul Wolfmeyer
201-404-6914

On the Air Activities

Club Operating Frequency

145.750 MHz FM Simplex

Sunday Night Phone Net

Murray Hill Repeater (W2LI) at 9:00 PM
Transmit on 147.855 MHz
With PL tone of 141.3 Hz
Receive on 147.255 MHz
Net Control K2AL

Digital Net

First & Third Mondays 9 PM
Details as announced.

Club Internet Address

Website: <http://www.nparc.org>
Webmaster K2MUN David Berkley
Reflector: nparc@mailman.qth.net
Contact K2UI, Jim

MOUNTAIN SPARK GAPS

Published Monthly by NPARC, Inc.
The Watchung Mountain Area Radio Club
P.O. Box 813
New Providence, NJ 07974
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Editor: K2EZR Frank McAneny
Contributing Editors:
WB2QQQ Rick Anderson
WB2EDO Jim Brown

Climatological Data for New Providence for June 2014

The following information is provided by Rick, WB2QQQ, who has been recording daily weather events at his station for the past 33 years.

TEMPERATURE -

Maximum temperature this June, 91 deg. F (June 17,18)

Last June (2013) maximum was 95 deg. F.

Average Maximum temperature this June, 81.9 deg. F

Minimum temperature for this June, 48 deg. F (June 1)

Last June (2013) minimum was 50 deg. F.

Average Minimum temperature this June, 60.9 deg. F

Minimum diurnal temperature range, 10 deg. (71-61 deg.) 6/11; (70-60) 6/12

Maximum diurnal temperature range, 32 deg. (80-58 deg.) 6/21

Average temperature this June, 71.4 deg. F

Average temperature last June, 72.4 deg. F

PRECIPITATION -

Total precipitation this June - 4.69" rain.

Total precipitation last June - 8.61" rain.

Maximum one day precip. event this June; June 9, 1.45" rain.

Measurable rain fell on 11 days this June, 14 days last June.

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Rick Anderson

7/8/14



PRESIDENTS COLUMN

By K2MUN

President's Column - David Berkley, K2MUN, July, 2014

I am sitting at my rig, waiting for the Monday night edition of the NPARC Digital Net to start. If you haven't participated, which is true of most of our members, this is a great deal of fun and an easy way to get into using various digital modes.

However, although the net is on 10 meters tonight (with some pre-net activity on 40 meters to connect to Dave, K2YG who is away in Nantucket), I want to pursue the issue of building antennas that don't quite fit in the space available.

Rather than follow my attempts to cram a 40 meter dipole into a 20 meter space, this month saw another variant on the same problem. One of our senior members, Jim Bushnell, N2TSJ, who recently moved permanently down to Florida, is also moving from his home there into a condo. The condo has no objection to an indoor antenna (on a conveniently located porch) but the dimensions don't allow the full 20 meter dipole Jim would like to operate on 20 meter PSK. In his case, he has a very limited objective: Put in a very simple antenna with which he can operate 20 meter PSK (very close to 14.070 MHz) at low power.

In order to help in his design efforts, I simulated his 16' wide porch. There is an opportunity to extend the antenna either horizontally (at right angles to the main section) or vertically. An additional 10' on each end would make the total length about equivalent to a full 20 meter dipole. Unfortunately, there is not quite enough horizontal space for a 10' horizontal section so there also is need for a 2' foot droop at the end. There are similar limitations for running the ends vertically towards the floor. However, which is the better choice and what is the effect of these wayward end sections?

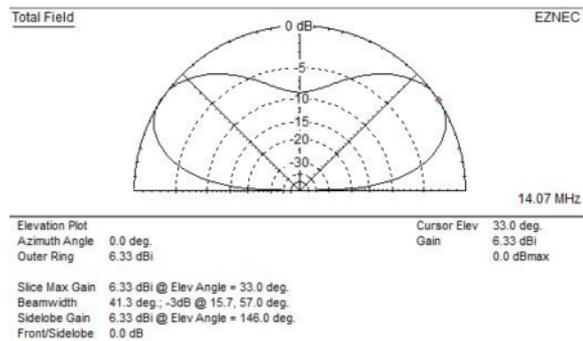
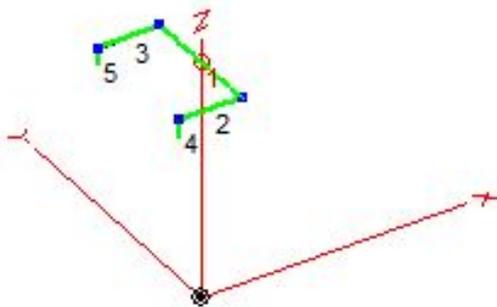
This is an easy EZNEC simulation and, to my surprise, the answer is obvious. Running the ends back, away from the main section, horizontally, yields a very good solution. In fact, at the design frequency, there is actually a little gain (almost 2 dB) over the standard dipole at about 33 degrees, which is a reasonable take-off angle.

Jim was also concerned about a metallic mounting strip for vertical blinds that will be only a few inches away from the antenna. I tried a simple model of this as just an unconnected wire in the same position. The result acts a little like a director, again providing a bit more gain (well under a dB, in this case). EZNEC provides no direct method for varying the conductivity of the wires in the model, which would have an effect on the model calculations.

In any case, the simulation has provided Jim with motivation to put up the simple dipole with back-folded legs and we will see what results!

If this type of discussion intrigues you, watch for at least a couple of meetings planned for the fall, where we will do a hands-on tutorial on using EZNEC for simple (and, possibly, some not so simple) antenna modeling.

Okay — here's the beginning of the digital net, running Hellschreiber this time — so I'm off. See you next month.



Simulated Bent Dipole (16' — segment 1) with back-folded (7.75' — segments 2 and 3) horizontal legs and small droop (2' — segments 4 and 5).

2D plot of antenna (at 14.070 MHz). Note that gain is slightly higher than that of a standard dipole at 33 degrees (6.33 dB vs. 4.5 dB for a standard dipole).

SCIENTIFIC TIDBITS

An Earth Clone?

For the first time astronomers have identified a planet outside our solar system that is both Earth-size and orbits its star in the so-called Goldilocks zone, where temperatures may be “just right” for supporting liquid water, and therefore, life. Researchers discovered the planet while reviewing data from NASA’s Kepler space telescope, which has spent the past five years hunting for habitable worlds beyond our solar system. The discovery, known as Kepler 186f, is less than 500 light-years away and part of a five planet system orbiting a red dwarf star in the constellation Cygnus. While astronomers cannot confirm the presence of water or detect a protective atmosphere, they have calculated that 186f is just 10% bigger than Earth and circles its sun every 130 days. Since similarly sized planets in our solar system are made of rock and iron, scientists say 186f is likely to have a rocky surface. What’s more, red dwarfs, which are cooler, dimmer, and smaller than our sun, are among the most common stars in the galaxy, raising the possibility that many more such worlds are out there. “This is really a tip-of-the-iceberg discovery,” Jason Rowe of the SETI Institute tells the Los Angeles Times. “We can infer that other ones are likely to exist.” This new discovery should have all the science fiction writers salivating over the imaginary story plot possibilities.

Balmy Antarctica?

When the atmosphere had much higher levels of carbon dioxide, Antarctica was as warm as California. New research has revealed that 430 million to 50 million years ago, temperatures on the frozen continent averaged 57 degrees Fahrenheit, with part of the surrounding Pacific Ocean reaching up to 72 degrees. In this ancient era, known as the Eocene epoch, carbon dioxide in the atmosphere was five times higher than today’s levels. This is a potentially useful insight for scientists working to predict future climate changes. The findings are based on a new technique that analyzes two isotopes found in fossilized bivalve shells to determine the temperature at which the ancient organisms grew. Another new technique, which analyzes krypton gas trapped in ice-locked air bubbles, is also being employed to uncover near-term climate shifts, allowing scientists to study atmospheric conditions from as far back as 1.5 million years. “Quantifying past temperatures helps us understand the sensitivity of the climate system to greenhouse gases, especially the amplification of global warming in Polar Regions,” says Hagit Affek, professor of geophysics at Yale University. I will bet that Andy Stillinger could have used some of that warmer weather when he was out maintaining the electronic instruments during his sojourns to the South Pole.

Jim WB2EDO