

MOUNTAIN SPARK GAPS

**NPARC—The Radio Club for the
Watchung Mountain Area**



**Website: <http://www.nparc.org>
Club Calls: N2XJ, W2FMI
Facebook: New Providence Amateur Radio Club
(NPARC)**

VOLUME 52 NO. 10 October 2018

UPCOMING EVENTS

Holiday Luncheon

12/2

Chimney Rock Inn, Gillette, NJ

Kids Day?

1/7/2018 2:00—5:00 PM

DeCorso Community Center

Regular Meetings

11/13 & 11/27

Monday 7:30

DeCorso Community Center

Meeting Schedule

Regular Meeting: 7:30—9:00 PM
2nd Monday of each month at the
NP Senior & Adult Center
15 East Forth Street
New Providence

Informal Meeting: 7:30—9:00 PM
4th Monday of each month
Same location

Everyone is Welcome

If a normal meeting night is a holiday,
we usually meet the following night.
Call one of the contacts below
or check the web site

Club Officers for 2016

President: W2PTP Paul Wolfmeyer
201-406-6914

Vice President: K2GLS Bob Willis
973-543-2454

Secretary: K2AL: Al Hanzl
908-872-5021

Treasurer: K2YG Dave Barr
908-277-4283

Activities: Open

—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
28,084 — 28,086
Will be using PSK and RTTY

Club Internet Address

Website: <http://www.nparc.org>
Webmaster KC2WUF david Bean
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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WB2QOO Rick Anderson

W2PTP Paul Wolfmeyer

K2UI Jim Stekas

Climatological Data for New Providence for
September 2017

The following information is provided by
Rick, WB2QOO, who has been recording
daily weather events at his station for the
past 36 years.

TEMPERATURE -

Maximum temperature this September, 87 deg.
F (September 24,25)

Last September (2016) maximum was 92 deg.
F.

Average Maximum temperature this September,
76.7 deg. F

Minimum temperature this September, 48 deg.
F (September 2,11,29)

Last September (2016) minimum was 46 deg. F.

Average Minimum temperature this September,
58.5 deg. F

Minimum diurnal temperature range, 9 deg.
(68-59) 9/6, (75-66 deg.) 9/17

Maximum diurnal temperature range, 25 deg.
(73-48 deg.) 9/11, (78-53 deg.) 9/12,

(87-62 deg.) 9/24

Average temperature this September, 67.6
deg. F

Average temperature last September, 68.9
deg. F

14 days this September had maximum tempera-
tures of 80 degs. or higher.

15 days last September of 80 degs. or higher
temps.

PRECIPITATION -

Total precipitation this September - 1.98"
rain

Total precipitation last September - 1.78"
rain

Maximum one day precip.event this September
September 6, 0.98" rain

Measurable rain fell on 8 days this Septem-
ber, 7 days last September.

YTD Precipitation - 36.24" (includes rain +
melted snow; 22.25" snow as of 3/31/17)

=====
Rick Anderson 10/10/17

243 Mountain Ave.

New Providence, NJ

(908) 464-8911

rick243@comcast.net

Lat = 40 degrees, 41.7 minutes North

Long = 74 degrees, 23.4 minutes West

Elevation: 380 ft.

CoCoRaHS Network Station #NJ-UN-10

At our last meeting some members started the assembly of a multifunction meter.
Below are some pictures from that meeting curtsey of K2AL.





An impressive array of tools.
The parts are all there but are too small with the naked eye.

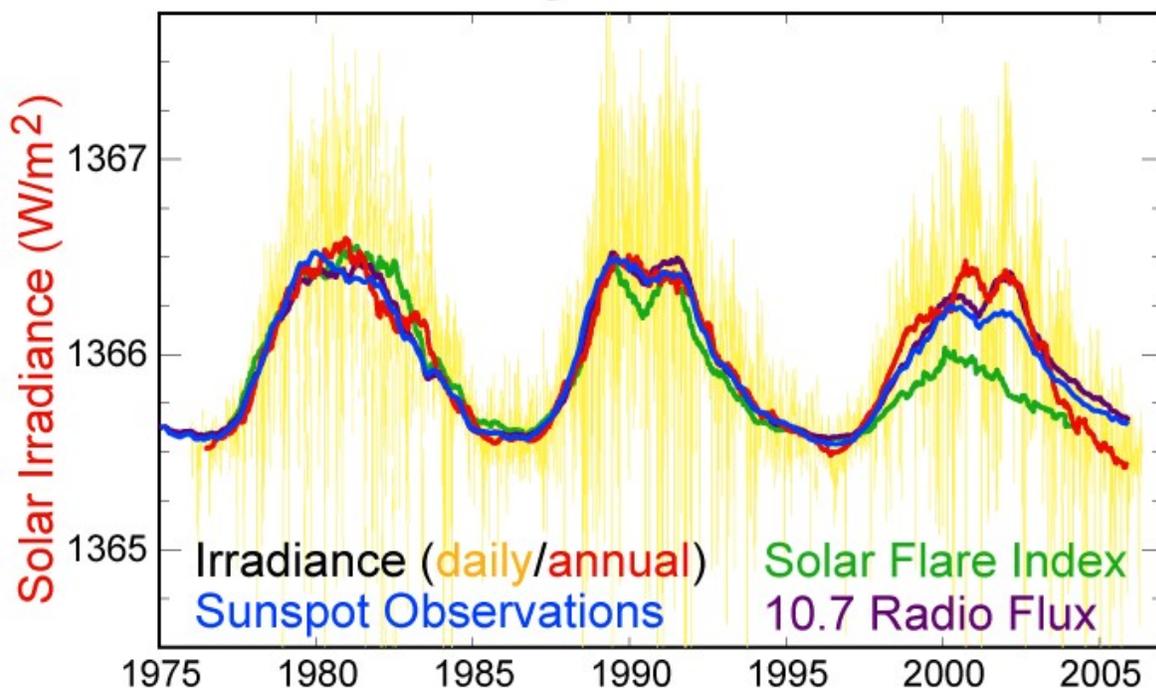
Sunspot Cycles

Jim Stekas - K2UI

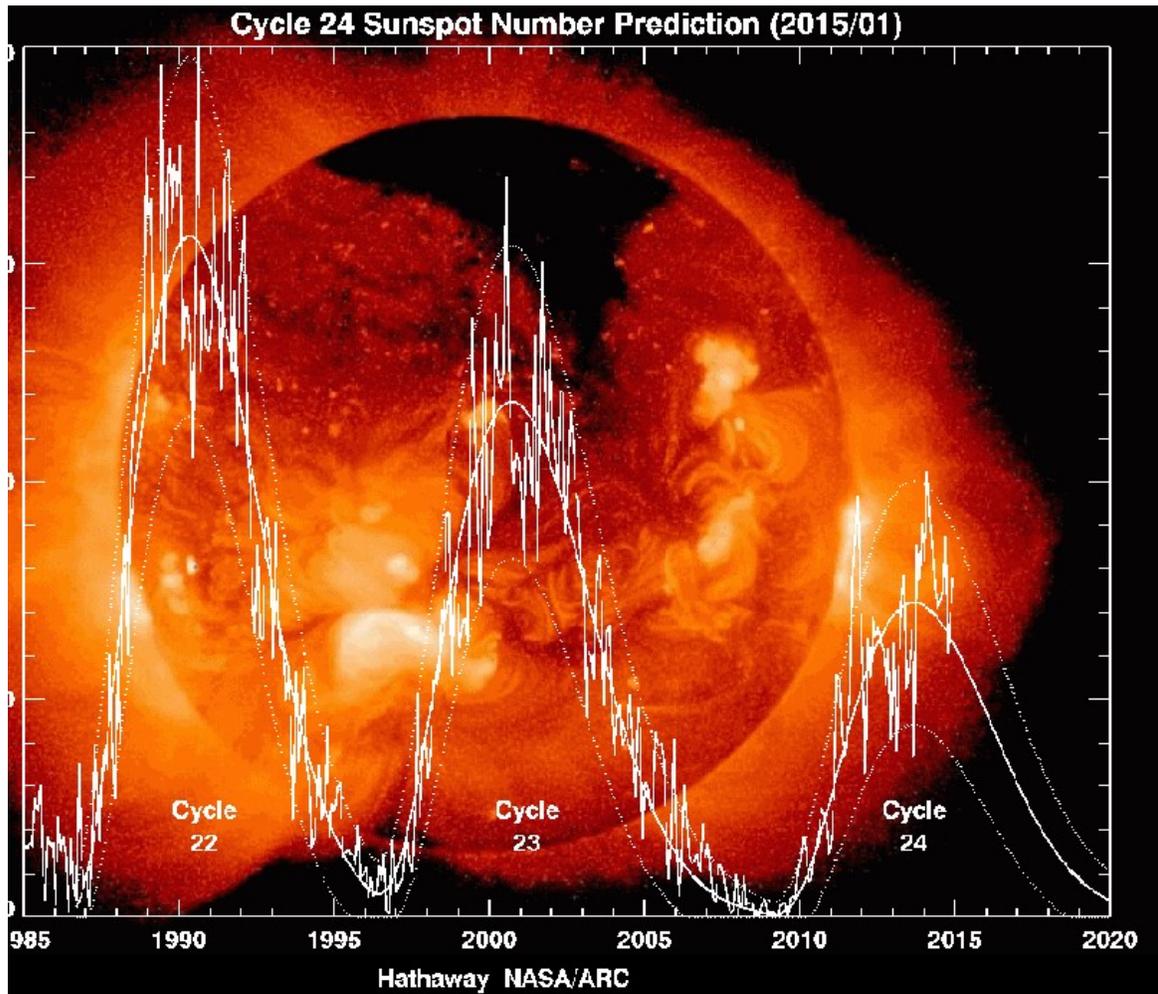
Inside our Sun are flowing rivers of plasma generating powerful magnetic fields which propagate in spherical waves from pole to pole. These waves travel from at a speed of about 60 ft/sec and undergo a full cycle every 11 years. When the wave is at the poles, the Sun looks like a bar magnet with magnetic field lines looping from pole to pole. But when the wave crosses the equator, magnetic field loops occur chaotically on the surface. Sunspots increase in size and number and more charged particle escape into the solar wind to charge up the Earth's ionosphere. For hams, the MUF (maximum usable frequency) increases and 15m, 10m and sometimes 6m bands open up for global communications. The good times last for 5-7 years or so, and the ARRL issues lots of DXCC awards.

Sunspots do not have any effect on the ionosphere, but the solar conditions that cause sunspots also cause the solar emissions that charge our ionosphere. Therefore sunspots are a good indicator of solar activity. The figure below shows that sunspot number, solar flux, and flares are all highly correlated over the 11-year cycle of solar activity. (Note: the power radiated by the sun changes less than 0.01% over a cycle.)

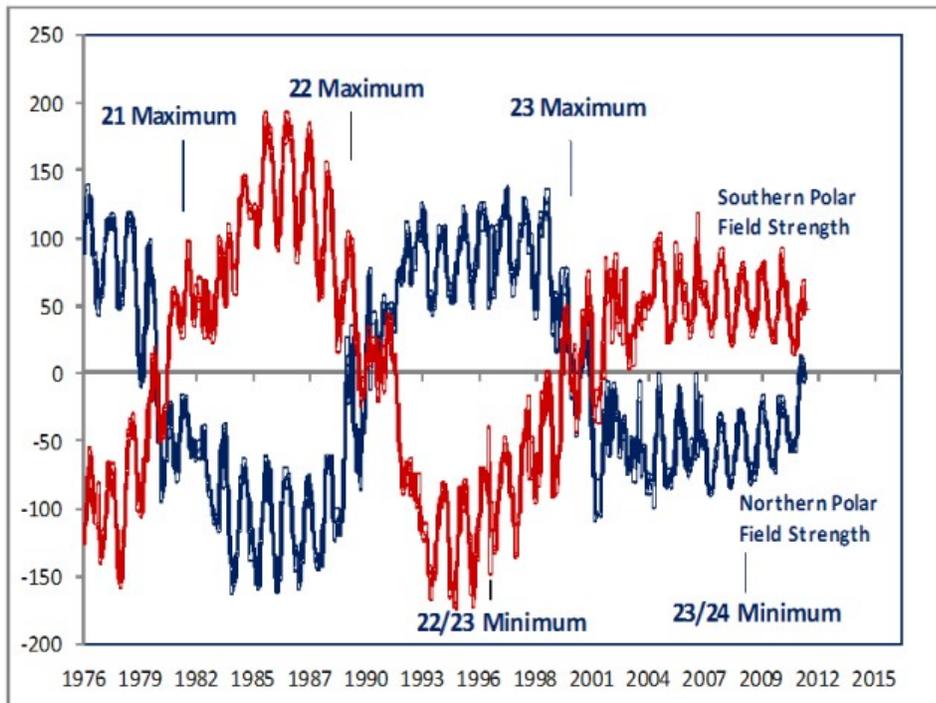
Solar Cycle Variations



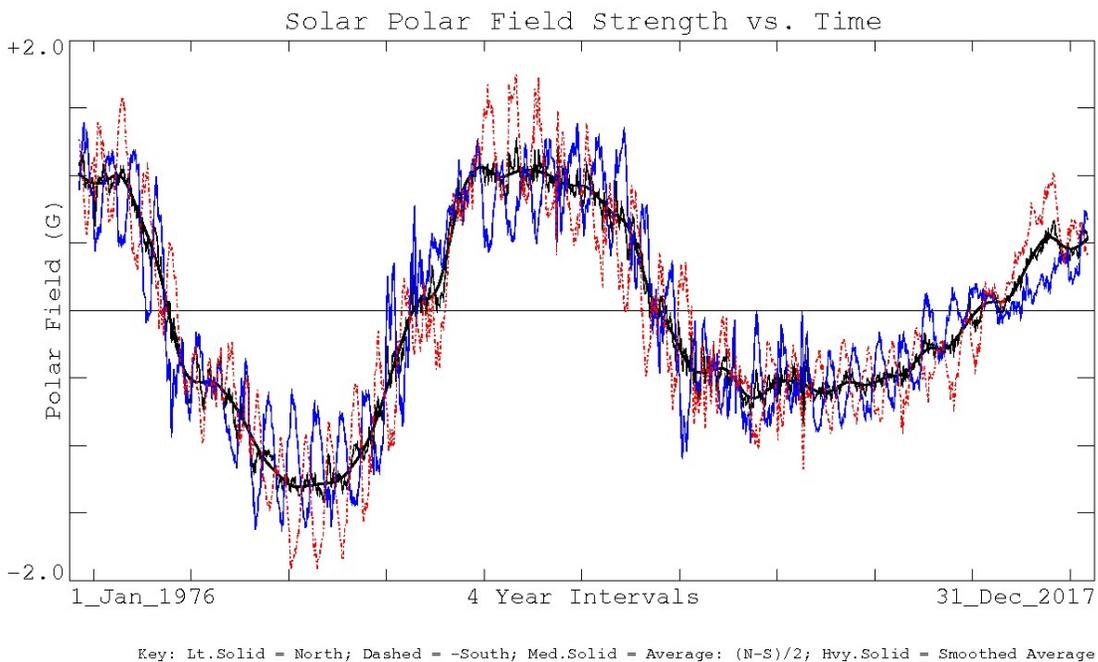
The last sunspot cycle (cycle 24) peaked in 2014 at average sunspot number of 100, about 30% below the previous peak (cycle 23). Today we are deep in a solar minimum and the 15m and 10m are dead. While waiting for solar cycle 25 a great way to while away the time is to investigate predictions about when the next cycle will start, when it will peak and how large the peak will be. Predictions such as these are notoriously inaccurate and you can do as good a job as the pros with a pair of dice and a Ouija board



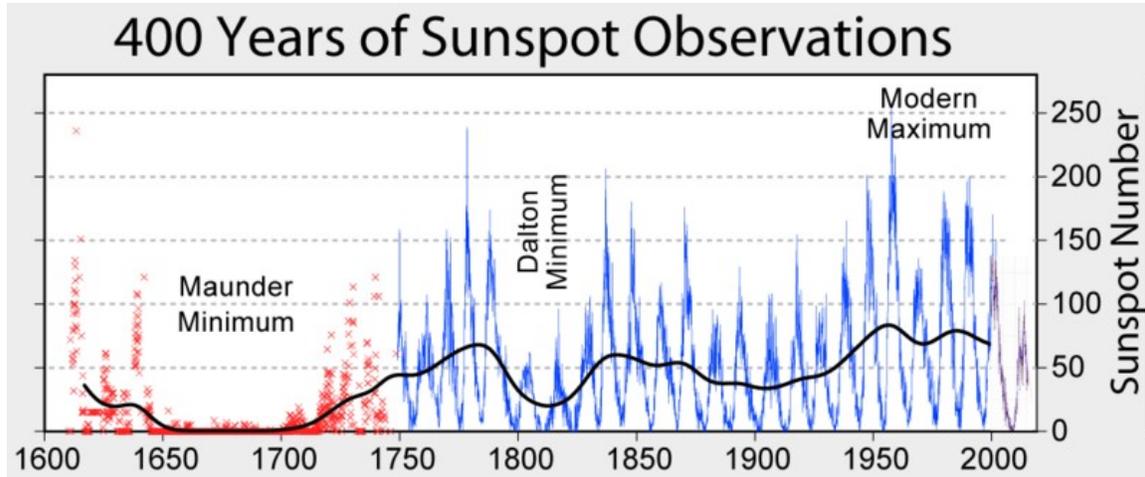
One indicator that seems to be a fairly good predictor of the next solar cycle is the strength of the Sun's polar magnetic field at the sunspot minimum. The weak polar fields in the minimum between cycles 23 and 24 predicted a weak maximum in cycle 25.



The polar field strength now, roughly at the minimum between cycles 24 and 25, is



Looking at sunspot numbers over 400 years shows that other than the 11-year cycle there are no regular trends to aid prediction. Over the last 60 years the sunspot cycles have been at a “Modern Maximum”. A similar maximum occurred from 1750-1800 and it was followed by the Dalton Minimum during which the sunspot number was below 50.



Could we be entering a “Modern Minimum” similar to the Dalton Minimum? Perhaps. Worse we could be entering another Maunder Minimum, 50 years with almost no sunspots at all! If another Maunder Minimum is in our near future, those 10/15m Yagis will end up as capacitive hats on towers serving as 80/40m verticals.

On the “glass half full” side, Maunder was accompanied by the “Little Ice Age”. Although all attempts to find a significant correlation between sunspots and climate have failed, maybe the loss of 10-15m will be accompanied by a few degrees of cooling that counters climate change.