

SB PROP @ ARL \$ARLP023
ARLP023 Propagation de K7RA

ZCZC AP23
QST de W1AW
Propagation Forecast Bulletin 23 ARLP023
>From Tad Cook, K7RA
Seattle, WA June 6, 2014
To all radio amateurs

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Boy, has solar activity declined this week, and the near term outlook weakened as well.

Average daily sunspot numbers for May 29 through June 4 dropped from 103.3 (for the previous seven days) to just 60.1. Average daily solar flux declined from 110.3 to 104.1. Last week the predicted solar flux for Field Day weekend was 108 and 110, and on June 2 that changed to 95 and 110.

Predicted solar flux for the near term is 110 on June 6-7, 115 on June 8-11, 110 on June 12-13, 120 on June 14-15, 115 on June 16-17, 110 on June 18-20, 105 on June 21-23, then dipping below 100 to 95 on June 26-28, then peaking at 120 on July 6-12.

Predicted planetary A index 8, 10 and 8 on June 6-8, 5 on June 9-17, 8 on June 18-19, 5 on June 20-24, 8 on June 25-26, 5 on June 27, 8 on June 28, 5 on June 29, and 8 June 30.

OK1HH predicts geomagnetic conditions will be quiet to active June 6, quiet to unsettled June 7-8, mostly quiet June 9-10, quiet to unsettled June 11, quiet on June 12, mostly quiet June 13, quiet June 14-17, quiet to active June 18-19, quiet on June 20-24, mostly quiet June 25-26, quiet June 27, quiet to unsettled June 28-29, and quiet to active June 30.

Randy Crews, W7TJ, has been thinking about where we are in this sunspot cycle, and what we might see in the near future.

He wrote, "It is now common knowledge that Cycle 24 is the lowest cycle in 100 years, and also being one of the slowest starts of any cycle in our radio lifetime. (Historically - with no exceptions - cycles that begin slowly are very low in peaks; the opposite of cycles that get off to a fast start.) Of the double peaked cycles (Cycle 22 and Cycle 23) this is the first cycle where the second peak has been higher than the first. November 2011 SF=153, February 2014 SF=170.

"The second peak has also afforded us a higher extended elevated solar flux, averaging 150 for the six months from November 2013 through April 2014. Quite a performance to say the least, and finally igniting 10 and 12 meters.

"However, prior to making plans to put up 10 and 12 meter stacked Yagis, we all need to be aware we are probably past the peak of Cycle 24 because we are approximately 70 months into this cycle from the low of the lows set in August of 2008. (The official low is booked as December 2008, however whatever date is used, it is late

in this cycle.)

"What is really behind the recent surge we had last spring and winter is not only the great combination of consistent monthly sunspots, but most importantly - the size and magnetic complexity was the largest of this cycle and mirrored many of the 200+ Solar Flux days we saw in Cycle 23 and 22.

"This trend is now on the decline, and aligning with Penn and Livingston's studies and measurements citing a steady decline in magnetic strength and complexity of sunspots since 1995. (We basically experienced a pause in a downtrend.) Livingston projects a continuation of the trend will result in virtually no sunspots by 2016, and Cycle 25 being even lower than Cycle 24.

"NASA says we may be heading into a mini Maunder Minimum. Putting all this together, we will be hard pressed to see good 10 and 12 meter DX propagation going forward. 15, 17 and 20 meters will most likely be the workhorse high-bands."

May is done, so let's look at our 3-month moving average of sunspot numbers. Centered on October 2013 through April 2014, the average daily sunspot number was 102.9, 123.7, 123.3, 138.5, 146.4, 148.2 and 129.6. This is just a simple arithmetic average for three months of activity. As we complete a new month and add that data in, an old month falls off.

Jeff Powers, KD9AGN is a Technician class ham in Janesville, Wisconsin, and is very excited to be on HF for the first time via the 10 meter band.

Jeff wrote: "May 24, 2014 was a big day in my ham adventure. It was the day of my first HF QSO! I got my ticket in January and with the Wisconsin winter we had we could only put up a 10 meter wire dipole in my garage. Many days I have sat at my radio and listened to 10 meters with nothing but static and called CQ until I was hoarse. Nothing.

"Imagine my surprise May 24 when W1AW/0 came booming in! At 19:35 after about half a dozen tries I got through the pileup. MY FIRST QSO! (Yes, I think even my neighbors heard me get excited. And that wasn't all. 10 was alive!) I made six QSOs that day and even bagged my first DX QSO, I worked HK3TK in Columbia, 2783 miles. I struck out on the 25th. Then on May 26 I worked ZP5DBC in Paraguay 5107 miles! My rig is an old Kenwood TS-520 and my wire is about 10-12 feet off the ground."

Eric Guzman, NP3A of San Juan, Puerto Rico wrote about an interesting backscatter effect, and provided us with audio too.

"Would like to share the most crazy propagation effect I have experienced in my 24 years as a ham. It happened during the CQ World Wide WPX CW Contest on 10 meters last weekend. Antenna setup was a 3/3 Stack pointing to Europe and a Q52 (N6BT 2EI Yagi) pointing USA. Headings between EU and USA from KP4 are approximately 90 degrees apart.

"While calling CQ on the stack (EU) on 10M on 5/25/2014 at 1430z and after working several EU stations, WY3P called in. Since it was a US station, I switched to the Q52 (on US) to send the exchange. When he came back, he was unreadable on the Q52. Was it LY3P or some other fancy EU prefix? Switched back to the stack and asked for a repeat. He was lot stronger again on the stack. I was so confused and

surprised I asked to repeat the call before logging the QSO. The call was confirmed. WY3P looked like coming from EU. This must have been the craziest backscatter. I mean, backscatter is the way we usually work other Caribbean stations on high bands, but this one was a W3. There was like a wall over the Atlantic bouncing back the signals. Amazing.

"I made a simple video with the recording. It can be seen at <http://youtu.be/Tyyn2eFBA-0>

"Besides that, propagation was spotty to EU. Sometimes it looked like it opened to Germany only. Missed a lot of usually easy EU countries. However, long path to ZL (very long shot) over South EU was there."

If you would like to make a comment or have a tip for our readers, email the author at, k7ra@arrl.net.

For more information concerning radio propagation, see the ARRL Technical Information Service web page at, <http://arrl.org/propagation-of-rf-signals>. For an explanation of the numbers used in this bulletin, see <http://arrl.org/the-sun-the-earth-the-ionosphere>. An archive of past propagation bulletins is at <http://arrl.org/w1aw-bulletins-archive-propagation>. More good information and tutorials on propagation are at <http://k9la.us/>.

Monthly propagation charts between four USA regions and twelve overseas locations are at <http://arrl.org/propagation>.

Instructions for starting or ending email distribution of ARRL bulletins are at <http://arrl.org/bulletins>.

Sunspot numbers for May 29 through June 4 were 55, 56, 55, 68, 56, 61, and 70, with a mean of 60.1. 10.7 cm flux was 102.7, 101.6, 103.7, 103.3, 105.3, 107, and 105.4, with a mean of 104.1. Estimated planetary A indices were 7, 9, 4, 5, 5, 7, and 5, with a mean of 6. Estimated mid-latitude A indices were 8, 8, 4, 5, 5, 5, and 6, with a mean of 5.9.

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