

SB PROP @ ARL \$ARLP049
ARLP049 Propagation de K7RA

ZCZC AP49
QST de W1AW
Propagation Forecast Bulletin 49 ARLP049
>From Tad Cook, K7RA
Seattle, WA December 5, 2014
To all radio amateurs

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Average daily sunspot numbers rose substantially over the past week, from 97.4 in the previous seven days to 152 for the most recent. Average daily solar flux rose from 168.9 to 172.1.

Predicted solar flux is currently 150 on December 5 and 6, 145 on December 7, 140 on December 8 to 12, 180 on December 13 and 14, 185 on December 15 to 19, 170 on December 20 to 23, 175 on December 24 to 27, 180 on December 28 to 30, 170 on December 31 through January 1, then 165, 160, 170 and 175 on January 2 to 5, and 180 on January 6 to 10.

Predicted planetary A index is 5 on December 5 to 12, 20 on December 13, 10 on December 14 and 15, then 8, 10 and 12 on December 16 to 18, 10 on December 19 to 20, 8 on December 21, 5 on December 22 to 27, then 15 and 12 on December 28 and 29, 8 on December 30 and 31, and 5 on January 1 to 6.

Petr Kolman, OK1MGW sent us his latest geomagnetic stability forecast. This might be important for this weekend's ARRL 160 Meter Contest.

Petr says to expect mostly quiet conditions December 5, quiet to active December 6 and 7, quiet to unsettled December 8, mostly quiet December 9 and 10, quiet to unsettled December 11, quiet to active December 12 and 13, quiet to unsettled December 14 and 15, quiet to active December 16 and 17, quiet to unsettled December 18 to 20, mostly quiet December 21, quiet December 22, mostly quiet December 23 and 24, quiet on December 25 and 26, quiet to unsettled December 27 and 28, and mostly quiet December 29 to 31.

Petr also expects increased solar wind on December 5 to 7, 11 to 13 and 16 to 18.

Note that OK1MGW has quiet to active conditions December 6 and 7, the days for the 160 Meter Contest, but the NOAA USAF prediction says an A index of 5 (which is quiet) for all of December 5 to 12.

The Space Weather Prediction Center warns that although their websites will remain up, the data will be stale from 6:00 AM until 6:00 PM MST on Saturday, December 13 due to system maintenance.

In addition, on December 2 SWPC posted this information:

"SWPC is pleased to announce that it will be switching to our new website on December 9th. When the site change is implemented www.spaceweather.gov and www.swpc.noaa.gov will link to the new website that is currently in final beta release at origin-www.swpc.noaa.gov. SWPC's legacy website will be available to all users for a transition period of at least 60 days (with the exception of POES satellite products which will be discontinued December 31). The legacy website will be located at legacy-www.swpc.noaa.gov.

Please note that if you have bookmarks or automatic links to pages on the old website, these links will no longer work. Most of the content will be available on the new site under new links and we

will work with customers who bring up specific content issues to ensure that their links are re-established on the new site.

Since April 2014, NOAA's Space Weather Prediction Center (SWPC) has sought feedback from stakeholders and customers via a survey on the beta release of the new website. We will continue to respond to feedback from stakeholders and customers regarding issues of content or behavior of the new site as we go through this transition to operational status.

For questions or feedback regarding this action, please use our feedback form:

<http://origin-www.swpc.noaa.gov/content/contact-us> "

Now let us examine some recent averages and trends for daily sunspot numbers. The average for the month of October was 92.1 and it was 101.9 for November.

Our three month moving averages of daily sunspot numbers centered on January through October were 138.5, 146.4, 148.2, 129.6, 118.4, 112.8, 109.2, 115.6, 108.4 and 107. The reason it ended in October is because this is the month the average is centered on, so the number for October consists of all the data for September, October and November, and the number centered on September is all the data for August, September and October.

Ken Gordon, W7EKB of Moscow, Idaho sent in a suggestion for a propagation program he likes, which is a part of the free Airmail Pactor software package, which you can download from <http://siriuscyber.net/ham/> . He likes it better than the W6ELprop program, which is also free. I had a couple of confusing issues to work out to get it running, but Ken cleared things up.

Paging back through correspondence, I see that he also suggested it in June 2013, but I was slow to act on it.

It gives you a nice percentage rating on the viability of the path, and the resolution is in one degree steps.

You can enter the default geographic coordinates for your station, but you actually need to pre-program the coordinates for every location you want to target. Ken says to edit some system files which were not apparent when I hunted for them, but you can actually edit a station list by clicking View, Station List, then click on the Ham folder and click the New button. The simplest way I found to do this was get the grid square from WM7D.net for domestic call signs, and you can enter this and the program will calculate the geographic coordinates.

Then to calculate path reliability or signal strength (I think based on 100 watts and a dipole), click View, Propagation or hit F8 and your station list comes up, and the option to enter either solar flux or sunspot numbers. I just averaged solar flux for the past 3 days and used that.

Then in the top Frequency window I enter the frequency in KHz. Remember it is KHz, so the low end of 20 meters might be 14020, but never 14.02.

There is also a way to have a list of frequencies shown for each station, but I am not that far along with it to describe it here.

To run the calculation, just hit the update button over on the right.

The ARRL Ten Meter Contest is next weekend, December 13 and 14. Find details at <http://www.arrl.org/10-meter> .

Note this event runs from 0000 UTC Saturday through 2359 UTC on Sunday. For most of us the start of the contest will be late

afternoon or early evening on Friday.

Fortunately the Geminid meteor shower should peak on December 14, so ten meter propagation may be aided by ionization from meteor trails. NASA has detected meteor fireballs beginning two weeks before the peak, according to Spaceweather.com.

Spaceweather.com also reported an M-6 class solar flare at 1825 UTC on December 4, and this caused a brief HF radio blackout in the Western Hemisphere. There was no CME. Forecasters estimate a forty-percent chance of additional M-flares over the next day or so.

We have all enjoyed the all-over real-time views of the sun at <http://stereo.gsfc.nasa.gov/> . But Don Kalinowski, NJ2E of Cary, North Carolina reports that contact with the STEREO B spacecraft has been lost.

http://www.skyandtelescope.com/astronomy-news/stereo-b-contact-lost-11212014/?et_mid=706619&rid=246428211

View a series of solar images at <http://www.discovery.com/tv-shows/curiosity/topics/sunspot-pictures/> and http://spaceweathergallery.com/indiv_upload.php?upload_id=105003PHPSESSID=2vpvkjg2rm771nb6726mhq1492 .

For more information concerning radio propagation, see the ARRL Technical Information Service 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 November 27 through December 3 were 155, 166, 156, 153, 160, 146, and 128, with a mean of 152. 10.7 cm flux was 178.8, 181.4, 177.3, 177.3, 168.1, 167.7, and 154.2, with a mean of 172.1. Estimated planetary A indices were 8, 5, 5, 9, 10, 12, and 8, with a mean of 8.1. Estimated mid-latitude A indices were 7, 5, 5, 6, 9, 9, and 7, with a mean of 6.9.

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