

SB PROP @ ARL \$ARLP002
ARLP002 Propagation de K7RA

ZCZC AP02
QST de W1AW
Propagation Forecast Bulletin 2 ARLP002
>From Tad Cook, K7RA
Seattle, WA January 9, 2015
To all radio amateurs

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All solar activity indicators rose this week, sunspot numbers, solar flux and geomagnetic indices.

On January 7 the interplanetary magnetic field tipped south, opening a crack to admit solar wind. This triggered the largest geomagnetic storm since September 2014. That same day the planetary A index jumped to 38, pushing the average for the week to 17.7. The previous seven days (the final seven days of 2014) the average planetary A index was 13.9.

Average daily sunspot numbers on the first week of January were 108.1, compared to 102.9 in the final seven days of 2014. Likewise, average daily solar flux increased from 134.9 to 144.7.

The latest prediction has solar flux at 160 on January 9, 165 on January 10-11, 170 on January 12, 175 on January 13-14, 180 on January 15, then 170, 165, 160, 155, 145, 140 and 135 January 16-22, and reaching a minimum at 130 on January 23-27. Solar flux then rises to a maximum of 175 on February 8-11. The January 15 flux at 180 is the highest predicted solar flux for at least the next 45 days.

Predicted Planetary A index is 15 on January 9, 10 on January 10-12, 8 on January 13, 5 on January 14-20, then 10, 15 and 5 on January 21-23, then 10, 18 and 15 on January 24-26, then 8, 5, 10 and 12 on January 27-30, 15 on January 31 and February 1, then 10, 8 and 18 on February 2-4, 10 on February 5-7, 5 on February 8-16, then 10 and 15 on February 17-18.

F.K. Janda, OK1HH predicts quiet to unsettled geomagnetic conditions January 9-10, quiet on January 11-17, quiet to active January 18, mostly quiet January 19, active to disturbed January 20, quiet to active January 21, active to disturbed January 22, quiet January 23, quiet to active January 24, active to disturbed January 25, quiet to active January 26, quiet to unsettled January 27, and mostly quiet January 28.

OK1HH also predicts an increase in solar wind on January 9-11 and again on January 28.

Mike Morris, WA6ILQ passed along a resource he heard about from Jeff Kincaid, W6JK. This is part of the new Space Weather Forecast Center web site, and the page is titled Radio Communication Dashboard:

<http://www.swpc.noaa.gov/communities/radio-communications>

Each of the three prediction displays is animated. Just hit the arrow button at the bottom, and the animation begins after a short delay.

The D Region absorption is important because the D Layer expands in

daylight, and absorbs and attenuates lower frequency radio waves. This is why 160 meter signals don't propagate for long distances during daytime.

If 160 meters seems dead after dark, you might check the D Region absorption to see if absorption is the culprit.

Also on this page is a nice graphic showing aurora probability and one showing solar X-ray activity.

I ran across this page, which shows a display for Southern Hemisphere aurora:

<http://www.swpc.noaa.gov/products/30-minute-aurora-forecast>

It's been some time now since we introduced <http://www.sunspotter.org/#/> via this bulletin, but here it is again. We can help classify sunspots by choosing which of two images is the most complex.

Brad Miskimen, N5LUL of Amarillo, Texas sent a screen shot from <http://www.dxmaps.com/spots/map.php> showing a 6 meter opening on Friday, January 2 around 2100-2200 UTC. Most of the contacts shown had their paths crossing at a midpoint near Vicksburg, Mississippi with an estimated MUF of 61 MHz above EM42 at 2106 UTC.

Scott Bidstrup, TI3/W7RI wrote from Costa Rica: "Propagation on the upper HF bands has been lackluster at best, with only occasional days of really good propagation, but the lower HF bands have benefited noticeably. Daily, on 75 meters, the signals into the States are very strong in the hours around sunrise and for up to an hour afterward, and Jay, HP3AK has been having some useful results for his daily early morning DX hunting in the DX window on 75 at his gray line. Our morning Central American coffee klatch on 75 meters has been interrupted occasionally of late by QRM from the States that often is as strong as the locals. And the local signals just this morning were as strong as I have ever seen them. I'm hearing good signals on 60m as well. I really wish we could get back our 60 meters privileges here in Costa Rica - that's a valued and needed band for us. But the prospects aren't good.

"6 meters is going into its usual Winter funk here, with ever fewer openings each day. We've been blessed, though, with a lot of short and erratic openings into the South Pacific, and Andy, YS1AG and Phil, TI5/N5BEK have been working Bob, ZL1RS and several VK4s at least once or twice a week. Other than a spectacular but short Es opening into the States one day last week, and another into northern Central America, there's been very little Es activity here in Central America in recent weeks.

"The almost-daily TEP openings from here into South America have been getting fewer and the signals weaker and being heard for shorter periods in the evening. Afternoon TEP has all but disappeared and the evening TEP is getting weaker and less reliable. That's the usual pattern here for this time of year; we expect openings to be weak and erratic until March when things should begin to improve. Time to do some antenna work - getting busy doing other things ought to stimulate some openings."

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/wlaw-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 January 1 through 7 were 101, 113, 122, 124, 89, 102, and 106, with a mean of 108.1. 10.7 cm flux was 137.5, 145.8, 148.7, 149.7, 141.9, 141.9, and 147.2, with a mean of 144.7. Estimated planetary A indices were 7, 12, 15, 21, 18, 13, and 38, with a mean of 17.7. Estimated mid-latitude A indices were 7, 8, 13, 15, 10, 11, and 23, with a mean of 12.4.

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