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ARLP001 Propagation de K7RA

ZCZC AP01
QST de W1AW
Propagation Forecast Bulletin 1 ARLP001
>From Tad Cook, K7RA
Seattle, WA January 3, 2014
To all radio amateurs

SB PROP ARL ARLP001
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Average daily sunspot numbers for the past week declined from 114.6 to 107.4, and average solar flux went from 138.8 to 139.2. This is comparing the period from December 26 through January 1 with the previous seven days.

The average daily sunspot number for the entire year of 2013 was 97.1, the highest since 2003. For 2008-2013 the yearly average was 4.7, 5.1, 25.5, 80.1, 82.3 and 97.1.

We've also been tracking a 3-month moving average of daily sunspot numbers, and the value for October 1 through December 31 was 123.7, the highest since December 2002 through February 2003, when it was 128.9.

The average daily sunspot number for October through December at 123.7 was even higher than the values for the first peak of the current solar cycle in late 2011. Back then the three month averages ending in November and December were 118.8 and 118.6.

The average daily sunspot numbers for the three month periods ending in February through December 2013 were 80.7, 85.2, 106.4, 106.4, 97.5, 85.6, 77.4, 91.2, 102.9 and 123.7. This is a moving average, rather than a quarterly average. So each average includes another new month as it drops off an old one.

Predicted solar flux for the short term is 165 on January 3, 170 on January 4-5, then 175 and 170 on January 6-7, 165 on January 8-9, then 135, 140 and 135 on January 10-12, 145 on January 13-14, 150 on January 15-18, 145 on January 19, 140 on January 20-21 and 135 on January 22-24.

Predicted planetary A index is 10 and 8 on January 3-4, then 5 on January 5-22, then 10 and 8 on January 23-24.

OK1HH predicts active to disturbed geomagnetic conditions on January 3-4, quiet to unsettled January 5, quiet on January 6-9, quiet to unsettled January 10, quiet to active January 11, quiet to unsettled January 12, and mostly quiet on January 13-17.

Clark Stewart, W8TN of Hurricane, West Virginia pointed out that the call ZM9ODX mentioned in the final propagation bulletin for 2013, ARLP053, actually belongs to a New Zealand special event station. It is not located on the subantarctic Auckland and Campbell islands, as K6TTD thought. Ed Callaway, N4II of Boca Raton, Florida also pointed this out.

W8TN has a nice blog devoted to amateur radio. Check it out at http://w8tn.blogspot.com/ .

Randy Crews, W7TJ of Spokane, Washington sent in an observation on the current solar cycle:

"The year 2013 will have the highest average Solar Flux of Cycle 24,
123 vs. 120 approximately for 2012. Fourth Quarter of 2011 was still the highest quarter of Solar activity in Cycle 24 with an average SF of 147.7 vs. 142.7 for the fourth quarter of 2013. It looks as if we will see a carry over effect into the New Year.

"The big difference has been the SIZE of sunspots, not the number.
Comparatively, we have had the same number of sunspots each month of this year. (Usually about 10-15 spots per day.) In October, November and December there was a dramatic increase in the size of the sunspots, raising the solar flux to values in the 160 to 175 range and igniting 10 and 12 meters. Currently there is a very large sunspot rotating into view on the left side of the Sun.

"Sunspots are important, however as this cycle has demonstrated - size does matter. Twenty small sunspots can be present, however if they are small, increases in solar flux will be anemic, and the higher bands will suffer. The key is solar flux, and CERTAINLY NOT the lagging indicator of smoothed sunspot numbers which will show a peak long after it occurs. Kind of like showing up for the Rose Bowl in Pasadena two months after it's played or put another way, you can be running Europeans on 10 Meters with a SF of 175, and the Solar Cycle peak might be 'officially' noted as happening three months later when the Solar Flux is 95, and your sweating talking to Europeans on 15 meters - hardly an

accurate depiction and certainly having no bearing on amateur's operating plans for either contests or DXing."

NASA released an updated solar cycle prediction, which you can see at http://solarscience.msfc.nasa.gov/predict.shtml. The difference from last month is they have upped their estimate for smoothed sunspot number at the maximum from 65 to 67. Also, last month they said "The smoothed sunspot number has been flat over the last four months. We are currently over four years into Cycle 24."

This month that same paragraph was changed to "The smoothed sunspot number has been rising again towards a second peak over the last three months. We are currently over five years into Cycle 24."

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 December 26 through January 1 were 96, 107, 95, 119, 93, 136, and 106, with a mean of 107.4. 10.7 cm flux was 124.7, 130.6, 134.5, 137, 142.9, 145.3, and 159.6, with a mean of 139.2.
Estimated planetary A indices were 3, 3, 3, 5, 3, 6, and 12, with a mean of 5. Estimated mid-latitude A indices were 2, 3, 4, 4, 2, 6, and 11, with a mean of 4.6.
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