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ARLP006 Propagation de K7RA

ZCZC AP06  
QST de W1AW  
Propagation Forecast Bulletin 6 ARLP006  
>From Tad Cook, K7RA  
Seattle, WA February 7, 2014  
To all radio amateurs

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Solar activity surged this week, with average daily sunspot numbers increasing nearly 55 points from 101.4 to 156.3. Average daily solar flux rose nearly 38 points from 142.9 to 180.4. These increases compare the recent period, January 30 through February 5, with the previous seven days.

Geomagnetic indices remained quiet. So quiet, in fact, that on February 4 the high latitude college A index near Fairbanks, Alaska was 0, because each of the 3-hour K index readings that day were 0. The same thing happened back on January 19.

Geomagnetic numbers will increase this weekend, with planetary A index predicted to be 5, 15, 10 and 8 on February 7-10, followed by 5 on February 11-16, 8 on February 17-18, 5 on February 19-24, then 8 on February 25, then 5 February 26 through March 1, and 12 on March 2.

Solar flux should be strong, with values of 190, 185, 180, 170 and 160 on February 7-11, 155 on February 12-13, followed by 135, 130 and 140 on February 14-16, and 145 on February 17-22. Solar flux is expected to gradually climb to 200 on March 1, drop slightly, then peak at 210 on March 5, followed by a low of 130 on March 14 and then another rise.

OK1HH supplies us with his geomagnetic outlook, and he predicts the geomagnetic field will be quite to active February 7-8, mostly quiet February 9-10, quiet of February 11, mostly quite February 12, quiet on February 13-15, quiet to unsettled February 16, quiet to active February 17, quiet to unsettled February 18, quiet on February 19-20, quiet to unsettled February 21, quiet on February 22, quiet to unsettled February 23, and quiet to active February 24-25.

Let us now review the recent averages, to see where solar activity has been and perhaps where it is headed.

The average daily sunspot number for the month of January 2014 was 126, the highest it has been since October-November 2013 when it was 127.2 and 125.7. Prior to that, the most recent date it was higher was way back in 2003, when the average daily sunspot number was 132.8 in July, and 150 in January.

We track a 3-month moving average for sunspot numbers, and the averages for the three months ending in September (2013), October, November, December and January (2014) were 77.4, 91.2, 102.9, 123.7 and 123.3. The last previous 3-month average that was a high as recent numbers was 128.9 ending in February 2003.

Looking over the numbers for the past few years to determine if

there was a double peak shows us high average sunspot numbers at the most recent period, 123.7 and 123.3 ending in December 2013 and January 2014, then 106.4 on both 3-month periods ending May and June 2013, then 118.8 and 118.6 ending in November and December 2012. This suggests that our second peak for Cycle 24 is the highest, although how that other peak (May-June 2013) will figure into a 12-month smoothed sunspot number is anybody's guess.

Last week's Propagation Forecast Bulletin ARLP005 mentioned something amiss with some of the recent solar flux and planetary 45 day forecasts from USAF/NOAA. I emailed my spreadsheets of archives for both predictions to a ham contact at NOAA, and they also saw the problem. Apparently on some days the prediction from two days prior was reported instead of the latest one, due to some software problem. They are working on a solution, and updating the past records as needed.

Randy Crews, W7TJ of Spokane, Washington wrote: "Due to the large size and magnetic complexity of sunspots now, January of 2014 set not only a new solar flux high and sunspot number (237 and 245, respectively) as you pointed out in an earlier article, but also exceeded the November 2011 average solar flux value of 153 to approximately 157. Size does matter! It looks as if we are seeing a nice carryover into February, however the overall trend and strength of this cycle will still be a low one. Typically we see big flux fireworks at the top of the cycle, and this one seems to be following suit. Recently there was an article on QRZ.com by a solar science astronomer in Arizona who recapped the trend in sunspot strength as on the decline. Bottom line: Take advantage of the great conditions while they last!"

K7RA heartily agrees.

Phil Plait's blog on Slate.com highlights a big sunspot, which he calls "ridiculously huge." Check it out at [http://www.slate.com/blogs/bad\\_astronomy/2014/02/04/sunspot\\_ar1967\\_huge\\_sunspot\\_cluster\\_rotates\\_back\\_into\\_view.html](http://www.slate.com/blogs/bad_astronomy/2014/02/04/sunspot_ar1967_huge_sunspot_cluster_rotates_back_into_view.html)

Mick, W3FJ of Williamsport, Pennsylvania wrote on January 31: "Just a quick note to mention a brief opening this morning from about 1520Z to 1630Z when I had to leave for an appointment. 6 Meters was open to a rather narrow area from my FN11 QTH in North Central PA into Georgia and Alabama. I worked N3HJX, KG4YTP, and W4VAS all in EM84 with good solid 59 signals. I also had a rather long QSO with my old friend Burt, WA4VUT in EM50 in Alabama. Burt was consistently 59+ during our 10 to 15 minute QSO. Burt has been around the band for many years and at age 87 sure doesn't look like he's going to give it up soon."

The ARRL DX Bulletin (<http://www.arrl.org/w1aw-bulletins-archive/ARLD006/2014>) reports that the CQ World Wide WPX RTTY Contest is this weekend, running from 0000 UTC Saturday, February 8 until 2359 UTC Sunday, February 9. In case that isn't clear, on the West Coast of North America (in Pacific Standard Time) that would be 4:00 PM tonight (Friday, February 7, 2014) through 3:59 PM PST Sunday, February 9. See details at <http://www.cqwxrtty.com/>. The site has a nice countdown time.

And finally, I was visiting a rural library in a county north of me and noticed a listing in their catalog for "The Radio Amateur's Handbook." But the curious thing about it was that the record did

not list a publication date or edition number (now titled the "ARRL Handbook," the 2014 copy is the ninety-first edition), and the subtitle was "A Manual of Amateur Short Wave Radiotelegraphic Communication."

I ordered it, and when it came in, I thought it must be a reproduction, because it was in perfect condition, with all the pages bright and white, no fading at all. It turned out to be the 1926 First Edition, and I was shocked to discover a signature on the flyleaf: "F.E. Handy" and "Personal Copy" written next to the signature. Francis Edward Handy, W1BDI was the original editor and creator of the handbook, and was also the Communications Manager for many years at the ARRL. He was also the ham who dreamed up Field Day and the ARRL Sweepstakes.

A couple of decades back I saw a classified ad in the back of QST placed by his son, offering for sale individual copies of his father's personal collection of handbooks. I bought several, and he included some blank W1BDI QSL cards designed by Gil, W1CJD, the artist who drew those classic ARRL illustrations for many years. One of the cards shows the fellow I bought the handbooks from, as a child, playing catch with a large glass vacuum tube, much to his father's distress.

I seem to recall that he had this first edition for sale at the time, but I couldn't afford it. The library got it in December 2005, and I can only assume that the buyer or the buyer's estate donated it to the library. I have it here, and it is quite a remarkable find.

Chapter One is titled, "What Is An Amateur?" and the third paragraph begins: "There is untold pleasure in two-way amateur operating. The covering of hundreds of miles and the handling of friendly messages with low amounts of power lends an interest not found in any other pastime. Perhaps the relaying of messages has not been sufficiently mentioned. That is one of the amateur's principal activities. Friendly messages are accepted at any amateur station. They are passed on toward their destination from one station to another. No charge is made for the service, and of course no responsibility can be fixed for failure to perform. Usually messages are delivered by telephone or by the operator in person as soon as they reach the city of destination."

Chapter Two, titled "Getting Started" begins the second paragraph with, "To understand and enjoy radio in the fullest sense we ought to listen to all that takes place. The broadcast listener has but skimmed the surface of radio fun. He has no conception of the joy that will be his, once he has put his finger on the throbbing pulse of two-way radio. Long waves, set up by frequencies below the broadcast band, bring us a horde of flute-like signals. Press messages, storm warnings, and weather reports from all over the world tell their story to whomever will listen."

This first edition is truly a remarkable book.

If you would like to make a comment or have a tip for our readers, email the author at, [k7ra@arrl.net](mailto: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 January 30 through February 5 were 112, 87, 147,  
163, 168, 183, and 234, with a mean of 156.3. 10.7 cm flux was  
160.5, 165.7, 176.7, 189.8, 188.3, 188.1, and 193.5, with a mean of  
180.4. Estimated planetary A indices were 5, 3, 5, 4, 6, 5, and 4,  
with a mean of 4.6. Estimated mid-latitude A indices were 4, 2, 2,  
4, 5, 4, and 5, with a mean of 3.7.

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