

SB PROP @ ARL \$ARLP007
ARLP007 Propagation de K7RA

ZCZC AP07
QST de W1AW
Propagation Forecast Bulletin 7 ARLP007
>From Tad Cook, K7RA
Seattle, WA February 13, 2015
To all radio amateurs

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We saw solar indices drop this week. Average daily sunspot numbers dropped from 139 to 81.6, while average daily solar flux went from 151.1 to 144.1.

Geomagnetic indices were more stable this week, with average daily planetary A index going from 14.7 to 8.4, and average mid-latitude A index declining from 9.4 to 6.6.

The two 7-day periods compared here are January 29 through February 4, and February 5 to 11.

Predicted solar flux for the near term is 120, 125, 130 and 135 on February 13 to 16, 140 on February 17 and 18, 135 on February 19 and 20, 140 on February 21 and 22, 145 on February 23 to 26, 150 on February 27 and 28, 145 on March 1, 140 on March 2 to 7, and 135 on March 8 to 10. Solar flux then reaches a low of 125 on March 12 and 13, a high of 140 on March 16 and 17, and back to 125 on March 21 and 22.

Predicted planetary A index is 8 on February 13 and 14, then 12, 15, 10, and 8 on February 15 to 18, 5 on February 19 to 21, 15 and 12 on February 22 and 23, 10 on February 24 to 27, 20 on February 28 through March 1, 15 on March 2, 10 on March 3 and 4, 5 on March 5 and 6, 8 on March 7, 10 on March 8, and 8 on March 9 to 12.

F. K. Janda, OK1HH believes that geomagnetic conditions will be quiet to unsettled February 13, quiet to active February 14 and 15, mostly quiet February 16, quiet to active February 17 and 18, quiet February 19, mostly quiet February 20, quiet February 21, quiet to unsettled February 22 to 27, active to disturbed February 28, disturbed March 1, active to disturbed March 2, quiet to unsettled March 3 and 4, mostly quiet March 5, quiet March 6, mostly quiet March 7, quiet to active March 8, quiet to unsettled March 9, quiet to active March 10, and quiet March 11.

He expects peaks in solar wind on February 15, 19 and 20, 25, 28, March 1 and 8.

Scott Bidstrup, TI3/W7RI wrote:

Here's an interesting article that says we've been miscounting historical sunspot activity from the last few centuries. And when corrected for the error, activity in past centuries has apparently really been pretty much the same as now, rather than the last few cycles being anomalously high as had previously been thought:

<http://esciencenews.com/articles/2015/02/10/the.suns.activity.18th.century.was.similar.now>

W7RI continues:

"Propagation for the much-anticipated K1N DXpedition to Navassa has

been a bit poorer here on the higher HF bands than might be expected for the high 304a index numbers we've been seeing over the last week or two, but the much-increased activity in 6 meters has made up for it down here.

Here in Central America, lots of the local hams have been getting their Qs in with K1N, mostly on 80 and 40, with a few on 160 and 20. Signals on 15 and 10 have been disappointing to say the least, probably because we're just too close here for those bands. But 20, 30 and 40 have been really great and some have had Qs on 160, with the low winter noise levels and the improved lower HF propagation of recent days. Jay, HP3AK, has been getting in his daily Qs with Japan on 75 meters at his sunrise grayline quite reliably of late. The upper HF bands have been a bit disappointing, however, with signals on 10 meters a fair bit weaker than might be expected, and 15 meters nothing to write home about. But since everyone's attentions here have been focused entirely on the Navassa DXpedition, none of that has much mattered.

After a long lull in 6 meter activity as a result of the abysmal 304a numbers, with practically no openings, the last week in January began to see some evening TEP from here into South America, and I was able to work my first Bolivia on 6 meter SSB about a week ago. I heard an HR1 on 6 quite loudly for a couple of minutes late one evening, but wasn't able to work him before he faded, and Michael, TI5XP, who is desperate for HR1 on 6, was cursing himself for having gone to bed early that night.

The Navassa fixation has had its effect on six here, too, with everyone spending their afternoons and evenings, eyes glued to their waterfalls for any hints of the K1N beacon on 50.103. Unfortunately, with 6 meters being the usual DXpedition stepchild, the 6 meter radio at K1N has apparently been unmanned, but just left on with the squelch up in the mess tent where someone on a Gatorade break would hopefully hear it if an opening happened. So as a result, everyone here has been blasting away at it between beacon transmissions all day and all night, hoping to break squelch and attract some attention. The LU/PYs seem to have had the most success during the nightly TEP openings, and Florida has been in second place, but here in Central America, we're broadside from the K1N beam when it is aimed at either region, so the best we can hope for is backscatter when aiming towards PY during the evening TEP openings. Doctor Andy, YS1AG, using that strategy, has reported the greatest success from Central America, with two Qs on 6 meters, sadly, neither of which have shown up in the log so far, apparently, we find out, because they're being recorded on paper and don't go out in the daily Clublog updates."

Thanks, Scott. For an explanation of the 304A index he refers to, see <http://www.bidstrup.com/w7ri-hf-radio-propagation.htm> and search for 304A.

>From that page: "The 304A Index is the relative strength of total solar ultraviolet radiation at a wavelength of 304 angstroms, emitted primarily by ionized helium in the sun's photosphere."

Patrick Dyer, WA5IYX of San Antonio, Texas wrote:

"Feb 4 1800-1900z the W5-7 area (mostly) had a 50-MHz F2 event to IK1EGC/MM as he moved from DJ03 to CJ93.

One has to wonder how often these events occur to the 'water grids', which (lacking any /MM ops) could only be noticed by backscatter effects.

This is a text version (transcribed from an audio tape) of K5CM's excellent presentation on backscatter at the August 1979 Central States VHF Society Conference in Irving, TX. I wish that I had access to the several slides of the oscilloscope traces that he used in that.

<http://www.qsl.net/wa5iyx/papers/k5cm1979.txt>

I'll leave it to the Floridians et al who have benefited over the recent weeks with several 50-MHz Es links into South American F2/TEP paths to detail those events."

Later he wrote:

"No sooner than I sent that info for Feb 4 a repeat event occurs today (his having moved to CJ83), best seen on this plot:

http://www.qsl.net/wa5iyx/images/20150207_1911z_last_50_W2LN_dxc.gif

Some labeled it as multi-hop Es, but with an azimuth spread of almost 90-deg from him to approximately the same ranges I'm pretty sure that it was F2 again as the Australian IPS global map of foF2 for the time period today also hints at. The chances of double-hop Es lining up over such a large sector near noon in February is rather low."

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/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 February 5 through 11 were 86, 71, 80, 94, 82, 82, and 76, with a mean of 81.6. 10.7 cm flux was 141.9, 143.3, 153, 152.8, 145.8, 141, and 131.1, with a mean of 144.1. Estimated planetary A indices were 13, 5, 9, 10, 8, 7, and 7, with a mean of 8.4. Estimated mid-latitude A indices were 10, 4, 9, 7, 5, 6, and 5, with a mean of 6.6.

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