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Objet: [DX-NEWS] ARLP047 Propagation de K7RA

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ARLP047 Propagation de K7RA

ZCZC AP47
QST de W1AW
Propagation Forecast Bulletin 47 ARLP047
>From Tad Cook, K7RA
Seattle, WA November 22, 2013
To all radio amateurs

SB PROP ARL ARLP047
ARLP047 Propagation de K7RA

Sunspot numbers made a profound leap over the past week, with the sunspot number on November 15 reaching 272, then 282 on November 17. This is a record for the current solar cycle, and this level of activity has not been observed for over a decade. Unfortunately the sunspot number declined rapidly since then, falling below 100.

You can check in the ARRL Propagation Bulletin archives to see what activity at this level and higher was like over a decade ago.

Go to http://arrl.org/w1aw-bulletins-archive-propagation and check out (in reverse order) bulletins 44 and 45 in 2003, 35 in 2002, 32 in 2002, 19 in 2002, 56 in 2001, 40 in 2001, 38 in 2001, 26 in 2001, 14 and 15 in 2001, 29 and 30 in 2000, 20 and 21 in 2000, 14 in 2000, 46 and 47 in 1999, 27 in 1999, and prior to that there was no sunspot number higher than we saw this week since Cycle 22. The last several days with zero sunspots prior to this period are detailed in bulletins 2 and 3 in 1998.

Note that for many of those periods, planetary A index was quite high. So the negative effects of all that high solar activity were geomagnetic storms.

Solar activity was national news this week, and this link has plenty of information about solar flares:
http://www.nbcnews.com/science/sun-fires-powerful-solar-flare-triggering-radio-blackout-2D11623878
.

The heightened activity caused 10 meters to virtually explode, with the band full of signals from around the world.

Average daily sunspot numbers rose more than 67 points from 126.1 to 193.3, while average daily solar flux rose 10 points, from 156.9 to 166.9.

The latest prediction has solar flux at 135 on November 22-23, 130 on November 24-28, 140 on November 29-30, 135 on December 1-3, 130 on

December 4, 135 on December 5-6, 130 and 135 on December 7-8, 140 on December 9-10, 135 on December 11-14 and 140 on December 15-18. Predicted values then bottom out at 115 on December 23-24, again on December 28-29, then jumping from 115 again on January 3-4 to 140 on January 5. This is a month and a half from now, so predictive value is dubious. But let's check that again in 2014.

Predicted planetary A index is 5 on November 22 through December 3, then 8, 5 and 12 on December 4-6, 10 on December 7-8, 5 on December 9-11, then 8 on December 12-13, and 5 on December 14-30.

OK1HH in Prague predicts geomagnetic activity will be quiet on November 22-25, quiet to unsettled November 26, quiet to active November 27, quiet to unsettled November 28, quiet November 29-30, active to disturbed December 1, mostly quiet December 2-3, quiet to unsettled December 4, mostly quiet December 5, quiet to active December 6-8, quiet December 9-12, active to disturbed December 13, quiet to unsettled December 14, quiet December 15-18.

Scott Bidstrup, TI3/W7RI in Costa Rica reported back on November 9, "Today was terrific. Worked dozens of Ukrainian and Eastern European stations this morning on 10 meter PSK with 30 watts into a 5/8 wave vertical. Band conditions were superb, and even now as I write this, more than an hour after sunset, I'm still seeing a few W5 stations, plus JA, VK and ZL on my waterfall, with the ZL stations the strongest."

On November 15 Scott wrote (note this was just before this week's sunspot number peak) "Looking at the current solar magnetograms, it looks like the southern hemisphere spots are becoming fewer but bigger and more intensely magnetized, which, as I understand it, is typical of early post-peak activity. On the other hand, the current imagery and the STEREO B imagery suggest there is a lot more southern hemisphere activity at the moment than there has been lately, so maybe we'll have some good conditions for awhile. I note that the 304a emission has been on an upward trend for some time, and shortwave X-ray has been active too, and is continuing to go up.
Good news, at least for as long as it lasts.

"I've been on 10 meter PSK a lot lately, and have noticed that the waterfall isn't as crowded in the last few days as it has been (a week ago, it looked like 20 meters), and signals have generally been a bit weaker, in spite of the rise in solar activity of the last few days. As before, it's been mostly low latitudes. My friends on 6 meters report to me that they've never seen the trans-equatorial openings into Brazil and Argentina as active as now, and we had the Mother Of All F2 Openings into North America about a week ago (and several smaller ones since). The whole continent was accessible, and my friends are all telling me they worked a dozen or more new grid squares. The only working 6 meter radio I have is FM only, and I didn't hear a peep on 52.525 MHz through the whole thing."

On November 15, N0JK wrote, "On November 10, EA8DBM worked FK8CP at 0055 UTC. This was likely a 'transpolar long path' over 20,000 km. 10 meters has been in good shape all week. Many have worked K9W, T33A and XR0ZR."

Also on November 15, Jim Henderson, KF7E wrote (about solar activity speculation and a second peak), "I don't know how high it will go, but I

felt way back before the last peak that this would be the case. Interesting to see it when so many focus on the weakening field."

"We have better (and more) instruments this peak, so it will be educational. I still believe in Mausumi Dikpati's work (Boulder CO) showing a last gasp before a few lackluster cycles. But most of us will consider ourselves very lucky to be active on HF for the next peak to see which prediction is closest."

Dikpati, many will recall, around 2006 predicted a much stronger Cycle 24, as noted in this outdated Wikipedia entry: http://en.wikipedia.org/wiki/Mausumi_Dikpati .

Also see: http://www.hao.ucar.edu/Public/about/Staff/dikpati/. Also see http://www.universetoday.com/71029/the-suns-conveyor-belt-may-lengthen-solar-cycles/.
There is also http://www.ias.ac.in/jaa/marjun2008/JAA03.pdf .

KD7DCR of Whitehall, Montana (high in the Rockies in DN35, and way off the grid) wrote on November 17: "After I read this week's report about that F2 (?) opening on 6 meters on Nov 10, I wondered if that is what I saw back on Oct 27.

"I was working the contest on that date (probably CQ Worldwide SSB DX) and decided to check 6 meters. There were no signals seen on the band scope around 0230 UTC. I called twice: W5BE in EM16 (Ponca City, Oklahoma) came back and gave me a 5/7, then KE5JXC came back with a 5/5 from EL39 (Kaplan, Louisiana), a new one! I heard some partials after this, but nothing worked. On my end, signals were low but clean and clear - I gave 5/3s. I had the amp on with a KW going out to a 7 el M2 at 48 feet. I have never experienced F2, that I know of, on 6 meters.

"I have been checking DX Maps for the E's MUF display - some days there are many, many, E's shown, mostly low value - but some are going above 50 for short windows of time, and then back below it.
Our winter E's may be more robust this year than in the past."

Patrick Dyer, WA5IYX in EL09ql wrote (about 6 meter F2 propagation on November 9), "The unexpectedly high F2 MUF from a rather minor amount of geomagnetic activity at the right time of the year with enough solar flux gave perhaps the first morning 50-MHz paths from here to the Caribbean of this poor Cycle 24. (During the peaks of Cycle 21-23 such paths from North America during 'the season' were often near-daily events for some.) A Sept 2011 (magnetic-storm induced) event in the afternoon did drive the MUFs into Ch A2 NTSC video see http://www.youtube.com/watch?v=vBBxYEQZJz0

"http://giro.uml.edu/IonogramMovies/ shows the 1600z Nov 9 foF2 for Austin, TX reaching near 15 MHz, falling back to 10 MHz within three hours while those at Boulder/Idaho never saw those enhanced levels (of course, high foF2s nearly overhead do me little good).

"I am a bit surprised that some North American transcontinental 6m F2 didn't occur during all this. From my 1988 notes of reports on the old 28.885-MHz net there were mid-November dates with the solar fluxes in the 150-180 range where 50-MHz F2 paths WERE reported from VE1/W1 to W6.

Nov 9, 2013, time is UTC 1518 39.600 police, US n.e. accents (and other unID 35s and 37s) 1530 33.420 WQIN663 FL Orlando (first assumed Es, but now I wonder!) 1537 50.115 FG8OJ Guadeloupe Island (2530.6 mi) http://fg8oj.com/ 1542 50.120 P43A Aruba (2177.0 mi) 1546 55.250 NTSC Ch A2 video - assumed Es from Mexico (61.25, 67.25 also in) but with 50-MHz F2 going on I had no time to investigate it with TV tuner(s) - could have been mixed with F2 backscatter signals 1548 50.052 V44KAI/B St. Kitts (2413.9 mi) 1557 50.130 PJ4NX Bonaire (2284.3 mi) 1603 50.115 FM5AN Martinique (2589.9 mi) 1608 50.062 KP3FT/B PR Ponce (10 w beacon) 1613 50.113 NP3IR PR OROCOVIS (2176.6 mi) http://www.np3ir.com 50-MHz out c. 1625 - the rest of day was very anticlimactic here

"50-MHz F2 to Puerto Rico is about as short as it usually gets in that direction from here (though I have had the Dominican Republic that way in the prior, better, Solar Cycles). The lack of any super strong 6m F2 backscatter on Nov 9 would imply that the MUF did not likely get into Ch A2 from here. It had been hoped that the enhanced F2 zone(s) would survive long enough to produce 50-MHz Pacific paths for here, but it all had quickly collapsed well before local noon for this area."

Thanks, Patrick!

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 November 14 through 20 were 234, 272, 213, 282, 144, 113, and 95, with a mean of 193.3. 10.7 cm flux was 175.8, 177.9, 174.5, 177, 163.3, 152.9, and 147, with a mean of 166.9.
Estimated planetary A indices were 2, 8, 9, 6, 3, 3, and 4, with a mean of 5. Estimated mid-latitude A indices were 2, 6, 11, 5, 2, 3, and 3, with a mean of 4.6.
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