

SB PROP @ ARL \$ARLP008
ARLP008 Propagation de K7RA

ZCZC AP08
QST de W1AW
Propagation Forecast Bulletin 8 ARLP008
>From Tad Cook, K7RA
Seattle, WA February 21, 2014
To all radio amateurs

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Earth's geomagnetic field has been quite active. On February 19 at 0234 UTC the Australian Space Forecast Centre issued this warning: "Increased geomagnetic activity expected for February 19." Then on February 20 at 0439 UTC they issued an identical warning for February 20. This was the result of two coronal mass ejections in two days.

The planetary A index went to 47 on February 19, the result of K index readings of 5 and 6 over most of the day. The high latitude college A index in Alaska was 57, and two of the 3-hour College K index readings were 7.

The next day, February 20, the planetary A index dropped from 47 to 39, and mid-latitude A index from 30 to 27. But the college A index actually increased, from 57 to 59 with one 3-hour period recording an A index of 8.

Average daily solar flux decreased from 171.9 to 158.7 on February 13-19, when compared to the previous seven days, February 6-12.

Over the same periods average daily sunspot numbers declined from 184.3 to 140.4.

Predicted planetary A index is 20, 15 and 12 on February 21-23, 7 on February 24-27, 5 on February 28 through March 8, then 10, 5 and 8 on March 9-11, 5 on March 12-15, 12 on March 16, 5 on March 17-23, and 8 on March 24.

Predicted solar flux is 155, 160 and 165 on February 21-23, 170 on February 24 through March 2, 175 on March 3-6, then 170, 165, 160, 155 and 150 on March 7-11, 145 on March 12-15, 150 and 145 on March 16-17, and 135 on March 18-20. Solar flux is expected to peak again at 175 on March 30 through April 7.

OK1HH predicts active to disturbed conditions February 21, quiet to active February 22, quiet to unsettled February 23, mostly quiet February 24, quiet February 25 through March 4, mostly quiet March 5, active to disturbed March 6, quiet to active March 7, active to disturbed March 8, quiet to unsettled March 9, mostly quiet March 10, quiet March 11-14, quiet to active March 15-16, mostly quiet March 17-18, and active to disturbed March 19.

TG Daily, a news site for technology enthusiasts ran an article on sunspots a few days ago. Read it at
<http://www.tgdaily.com/space-features/88206-sunspots-like-pinwheels>

Bob Foster, N9BGC of Waverly, Iowa reports great 10 meter conditions

last weekend. He wrote, "Propagation was truly amazing this weekend during the ARRL International DX CW Contest. Some of the strongest 28 MHz CW signals ever heard at my QTH came pounding in: Russia around 8 AM CT (1400 UTC), Western Europe to South America between 9 AM CT and 11 AM CT (1500-1700 UTC). These were legitimate S-9 signals using an antenna exhibiting no gain. By early afternoon, the signals from U.S. 7 and 6 districts dominated 28 MHz, so the DX was hard to pull out of the pileups. Still, it was one of the best 28 MHz DX weekends since the early 1980s."

Jon Jones, N0JK of Kansas also commented on great 10 meter conditions: "Surprisingly good conditions on 10 meters in the ARRL DX CW. Best in years."

"I was watching 6 meters for the predicted CME impact and happened to tune across the 10 Meter CW band Saturday morning. I heard OK1GK 599 at 1620 UTC on the 6 meter M2 loop. I called him not expecting anything (the high SWR folded the power back probably to a watt or so) but he came right back! Hmmm. Band seems hot. I don't have any HF antennas up yet."

"I put a CB mag. mount whip on the Weber Grill for 10. [Jon sometimes uses his barbeque on his deck as an antenna mount! - Ed.] Worked over 100 EU stations over the next 3 hours. Most first call and most were well over S-9. Also 6W, CT9, EA8, etc. That afternoon I went out mobile to a high spot. Logged Japan, UA0, KH2, DU and VK. Some of the JAs were 20 over S-9. I think over 100 countries were possible on 10 from the Midwest. One of the locals here worked 99 on 10 meters during the contest."

Jeff Hartley, N8II of Shepherdstown, West Virginia wrote, "It was quite a fun weekend in the ARRL DX contest. Despite solar flares, conditions allowed for many QSOs. Conditions were so good that N1UR claims a new low power all-band record, one which has stood since 2002, near the peak of Cycle 23 when solar activity was much higher than now."

"I started on 20 meters and the band was wide open to West Africa and surprisingly to Europe as far as HA and OK as well as EA6, EA, F, I, and also to northern Europe working SM and OH. Asian stations were not very loud or numerous. 40 was open well to EU where I was able run some EU stations including good signals from northern EU. Signals were also good from all over EU on 80 where again I was able to run about 35 stations with my low power."

"The reverse beacon network (RBN) has revolutionized CW DX contesting. The first night as I switched bands, running to 40 meters, RT3F, EA6FO, CN2AA, and Olympic station R22ALS all called in quickly. Then, on 80 meters the same thing happened thanks to RBN! The system is so fast that many times stations can hop onto your frequency and call you before your first CQ is completed! Every time on Saturday when I started a new band, there was a nearly instantaneous pile up due to the RBN spots."

"I got off to a late start Saturday around 1200Z on 15 meters and kept running stations in EU at a good rate all day long, going up to 10 meters just past 1300Z, then back to 15 around 1645, down to 20 at 1830Z where there was plenty of space, but still good strength EU signals that were even louder by 1900Z. Russian signals were good on all bands when I was there which was quite surprising considering how late it was in Russia by the time I got back to 15 and 20, still numerous strong signals on 20 at 2000Z. E20AE in Thailand called in on 10 meters around 1330Z. Several TF (Iceland) stations called on

the bands, especially 20 meters. Around 2140Z on 15, OH5, SE2, and CS2 were all found, a nice late opening and signs of a solar flare.

"Around 2130Z, a solar flare hit which did almost as much good (or more so) than harm. Signals over the pole had a pronounced auroral buzz on 15 and later the same was true on 20, but the JAs were loud on 15 (first JA at 2148Z), and I was pleased to run a few. On 10 my luck was even better with one of the best CW JA runs I have ever had from here starting at 2255Z which lasted about 50 minutes and included a nice surprise from 9M6XRO, about S-7. Northern Japan had the buzz flutter, but stations from about JA1 southward did not. I found a Chinese BG2 station and also DS and DU. The Russians from Sakhalin Island north of JA and RT0C were very loud. RT0C was even louder on 15 meters, and stations from Guam and KL7 were quite loud there as well. Thanks to the flare, 20 was open all the way from UA3 to UN6 to JA at 0030Z and the signals all had a pronounced buzz with good strength. The low bands suffered high absorption, and only southern European stations (most of which were already logged Friday night) were available along with a few from Africa and South America. At 0200Z, 20 was hopping with some JAs and strong signals from VU2 across to UA4. A BH6 was found and even managed a QSO with Poland. I was informed via the PVRC hams and 3830 reports that the opening even got better to EU and 20 stayed open for some to Europe right through sunrise in North America.

"K3ZO and I discussed conditions at the PVRC meeting. Fred thought that solar activity was high enough this past weekend for excellent high band conditions despite being well below previous cycle levels. He also feels that due to the reversal in progress of the magnetic field on the sun, that the solar flares cause much less severe disruptions in propagation, due to lower intensity than in past cycles.

"Conditions Sunday morning were not quite as good as Saturday, with noticeably fewer Russians and 15 and 10 opening later, but there were still plenty of loud Europeans. 20 was good to EU at 1130, 15 was open well by 1200Z with two UN stations calling in around 1230 and when I arrived on 10 at 1250Z, the band was open to EU but not very well to eastern EU. Things gradually improved and between 1400 and 1430Z, a loud VU2, two 4Ks and another VU called in. The calls kept coming from EU on 10 until 1620 when I moved down to 15 which was crowded with somewhat weaker signals from EU, some still quite loud. It was down to 20 meters around 1800Z with still plenty of EU stations to work, but many were weak. 20 just kept on improving as the EU evening progressed and absorption decreased and I was able to again run some stations in the 2200Z hour about as far east as OK and HA with strong signals from north EU. 9V1YC at S9 and B4TB were logged on 20. Around 2100Z one OH was worked on 10 and 15 was open to every point on the compass with strong signals from Scandinavia and SW EU, and good signals from the Caribbean and farther south, Africa, Oceania (KH6/KH2), and KL7. 40 was again not so great at 2300Z to EU and at the end JAs were loud on 15 meters.

"It was a very busy weekend working all bands, with many hours when 2-3 bands were in very good shape at the same time."

David Mishler, KJ6TOA in La Mesa, California wrote on February 20 saying that with the CME (solar flare) and all HF bands sounding dead, at 2317 UTC on February 19 he worked ZL3AAU in Christchurch, New Zealand on 50.16 MHz. ZL3AAU said in an email that he worked about 20 other stations in the United States. David says he ran 100 watts with a TS-480SAT and a Hexbeam. Four hours earlier he worked Belize and Honduras on 6 meters.

This weekend is the SSB portion of the CQ World Wide 160 Meter Contest. It starts today (Friday, February 21) at 2200 UTC. For details check <http://www.cq160.com/> .

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 February 13 through 19 were 157, 196, 135, 137, 101, 134, and 123, with a mean of 140.4. 10.7 cm flux was 166.6, 166.6, 162.1, 153.9, 152.4, 151.4, and 157.7, with a mean of 158.7. Estimated planetary A indices were 3, 4, 11, 22, 5, 7, and 47, with a mean of 14.1. Estimated mid-latitude A indices were 2, 4, 7, 14, 4, 6, and 30, with a mean of 9.6.

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