

SB PROP @ ARL \$ARLP031
ARLP031 Propagation de K7RA

ZCZC AP31
QST de W1AW
Propagation Forecast Bulletin 31 ARLP031
>From Tad Cook, K7RA
Seattle, WA August 1, 2014
To all radio amateurs

SB PROP ARL ARLP031
ARLP031 Propagation de K7RA

Spaceweather.com reports that a CME is coming toward us from the sun since July 30 when a magnetic filament erupted. It may sideswipe our magnetic field on Saturday, August 2, and there is a thirty percent chance of geomagnetic storms in polar regions.

Right now there are plenty of sunspots, but they are magnetically weak.

Since July 24, the Dominion Radio Astrophysical Observatory in Penticton, British Columbia has been experiencing some serious computer network issues, I think involving a severed fiber optic cable. As a result, we do not have a source for the 10.7 cm. solar flux values resolved to one-tenth of a point. This is not a serious problem, except those of us who archive the values like to see the values in a consistent format. We can still get the flux values resolved to whole integers from NOAA:

<http://www.swpc.noaa.gov/ftpdir/latest/DSD.txt>

These numbers appear at the end of the weekly bulletin. For those who archive the values, when the Penticton site goes back online you will be able to correct the values from these usual sources:

<http://www.spaceweather.ca/solarflux/sx-5-flux-eng.php>

ftp://ftp.geolab.nrcan.gc.ca/data/solar_flux/daily_flux_values/fluxtable.txt

The official flux number is the daily local noon value, which is at 2000 UTC. When the system comes back online, you should see solar flux readings after July 23. NOAA has always presented these as whole integers, and for the past week the noon flux has been supplied via a daily phone call to Boulder from Penticton.

Using the flux values rounded to whole integers makes little difference. For example, rounding to whole integers would change the average solar flux in ARLP027 from 129.5 to 129.6, and in ARLP028 it does not change the average at all.

Thank goodness there were no zero-sunspot days over the past week, so the average daily sunspot number rose from 25.9 in the July 17 to 23 period to 107.7 this week. Average daily solar flux rose from 90.3 to a more robust 125. Solar flux on Thursday, July 31 was 156.

July ended yesterday, so we can look at recent averages. The average daily sunspot number for July was 113.6, up from 107.8 for June. The three month moving averages of daily sunspot numbers for the past year are 85.6, 77.4, 91.2, 102.9, 123.7, 123.3, 138.5, 146.4, 148.2,

129.6, 118.4 and 112.8.

Predicted solar flux for the near term is 160 on August 1 and 2, 150 on August 3, 145 on August 4 to 6, then 140, 120, 110, 105, 100 and 95 on August 7 to 12, 90 on August 13 to 15, 95 on August 16 and 17, 100 on August 18, and 105 on August 19 to 21.

>From July 21 to 27 the flux value predicted for August 18 was only 85, but that was revised back to 100 on July 28, the same value predicted from July 13 to 20 (for August 18. Is that clear as mud?)

Predicted planetary A index is 5, 8, 14, 10, and 8 on August 1 to 5, then 5, 8, 6, 5 and 8 on August 6 to 10, 5 on August 11 to 21, then 8, 5, 12 and 10 on August 22 to 25, and 5 on August 26 to 31.

F. K. Janda, OK1HH predicts mostly quiet geomagnetic conditions August 1, quiet to unsettled August 2 and 3, quiet to active August 4, quiet to unsettled August 5 and 6, quiet August 7, quiet to active August 8, active to disturbed August 9, quiet to active August 10 and 11, quiet August 12 to 15, mostly quiet August 16, quiet August 17 and 18, mostly quiet August 19 and 20, quiet August 21, quiet to unsettled August 22, quiet to active August 23 and active to disturbed on August 24.

Scott Bidstrup, TI3/W7RI commented, "You wrote: 'No sunspots? Sky and Telescope recommends observing faculae.'

There's actually a good reason for hams to do so. Faculae actually appear fairly bright in the 304 angstrom wavelength images of the sun. When they are large and numerous, even in the absence of significant sunspots, they can contribute significantly to the 304 angstrom ultraviolet that causes about half of our F2 ionization. So when the sunspots are low, but the propagation isn't all that bad, it's a good bet that there are a lot of faculae present on the solar disk.

You can easily see if this is the case in the 304 angstrom image of the sun, which can be found on my propagation web page at <http://www.bidstrup.com/w7ri-hf-radio-propagation.htm> . The 304a image is the upper right in the group of four solar images (the image can be viewed full size by right-clicking the image and selecting "view image" from the drop-down menu). Sunspots normally appear as a bright, white spot in this image, but faculae appear as bright orange areas surrounding the sunspots, much brighter than the background granulation around them. The faculae may not be as bright as the sunspots, but they make up for that in a much larger area on the solar surface.

While the faculae don't show up quite as well in the 195 angstrom image from the STEREO B spacecraft beacon, the green image just below the 304a image on my page, it will give you an idea of what faculae as well as active regions are about to rotate into view. So it can be useful to watch these images to get an idea of what is coming up - particularly for a contest weekend - it can help in planning band strategies."

Thanks Scott!

Tomas Hood, NW7US, the propagation editor for CQ and several other magazines, is publishing cool propagation and space weather information throughout each day on his Space Weather and Radio Propagation page on Facebook (see <https://www.facebook.com/spacewx.hfradio>).

These posts include current images from the Solar Dynamics Observatory (SDO) instruments that watch the Sun 24/7, daily space weather and radio propagation conditions and forecasts, plus educational tidbits that can enhance your understanding of this exciting topic. Anyone who has a Facebook account can 'Like' and have notifications turned on so that you can see alerts when these page posts are made. Speaking of educational material, check out the self-study course that Tomas is offering at <http://nw7us.us/swc> .

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/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 July 24 through 30 were 55, 65, 76, 110, 143, 160, and 145, with a mean of 107.7. 10.7 cm flux was 104, 107, 117, 121, 132, 142, and 152, with a mean of 125. Estimated planetary A indices were 5, 6, 7, 5, 9, 4, and 5, with a mean of 5.9. Estimated mid-latitude A indices were 6, 9, 9, 6, 12, 6, and 7, with a mean of 7.9.

NNNN
/EX

To unsubscribe or subscribe to this list. Please send a message to
imailsrv@njdx.org

In the message body put either

unsubscribe dx-news

or

subscribe dx-news

This is the DX-NEWS reflector sponsored by the NJDXA <http://njdx.org>
