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À: DX-News@njdxa.org
Objet: [DX-NEWS] ARLP039 Propagation de K7RA

SB PROP @ ARL $ARLP039
ARLP039 Propagation de K7RA

ZCZC AP39
QST de W1AW
Propagation Forecast Bulletin 39 ARLP039
>From Tad Cook, K7RA
Seattle, WA September 27, 2013
To all radio amateurs

SB PROP ARL ARLP039
ARLP039 Propagation de K7RA

Our sun is still very quiet, but solar flux and sunspot numbers were higher this week than last. Average daily sunspot numbers rose from 42.3 to 75.6, and average daily solar flux rose from 95.3 to 109.6. There were no big geomagnetic events this week.

Predicted solar flux is 110 on September 27 through October 2, then 105, 100, 95, 100, 105 and 100 on October 3-8, 95 on October 9-10, then 100, 105 and 100 on October 11-13, 95 on October 14-15, and all the way down to 90 on October 16-19.

Predicted planetary A index is 5 on September 27-28, then 8, 10, 12 and 8 on September 29 through October 2, 5 on October 3-9, 8 on October 10-11, 5 on October 12-13, then 8, 10 and 8 on October 14-16, and 5 on October 17-19. This is unchanged from the forecast in Thursday's ARRL Letter.

F.K. Janda, OK1HH of the Czech Propagation Interest Group predicts active to disturbed conditions September 27, quiet to active September 28, mostly quiet September 29, quiet on September 30, quiet to active October 1, quiet October 2-5, quiet to unsettled October 6-7, mostly quiet October 8, back to active to disturbed conditions October 9, as it was on the first day of this forecast.

David Moore, a shortwave listener in Moro Bay, California is a frequent contributor here, and sends a New York Times article titled "The Sun That Did Not Roar", about our current quiet sun. In reference to a weak solar event last week, it characterized a CME as what "seemed like the halfhearted effort of a slacker star." See it at http://nyti.ms/1fd48GT .

But 160 meter operators are not despairing a dearth of solar activity to come, as more solar activity correlates with higher geomagnetic activity, and they like things nice and quiet.

Often the declining years of a solar cycle are marked by heightened geomagnetic activity (see http://www.spacew.com/gic/guidance.pdf for a treatise on this) and I can recall times during the decline of cycle 22

in the 1990s when it seemed like geomagnetic disturbances were constant. Although the record in its most easily accessible form doesn't go back as far as we would like, check out this geomagnetic index record from 1994:

http://www.swpc.noaa.gov/ftpdir/indices/old_indices/1994_DGD.txt

Check out February 5-15, February 21-22, March 3, March 7-21, April 1-18 (especially April 17, with a huge planetary A index of 130!), May 1-17, May 28-31, Jun 25 to July 7, September 7-10, October 3-7, 23-24, and 29-31, and November 26-27. Note the very large planetary A index values throughout the year, and this represents week after week buffeted by high absorption and even radio blackouts. As if this wasnâ€™t bad enough in the middle latitudes, I recall Vince Van Der Hyde, K7VV was living in Alaska at the time (possibly near the 65th parallel) and told me later that his favorite HF bands were unusable for months at a time, due to the concentration of geomagnetic energy toward the poles.

In the table above, check out the College A index, which is measured near Fairbanks at the University of Alaska. It is in the middle column. See all those asterisks where there should be numerals?
Those are periods when the magnetometer was unusable due to being swamped with too much energy from a coronal mass ejection, for instance. Now compare the numbers in 1994 to more recent readings:

http://www.swpc.noaa.gov/ftpdir/indices/old_indices/2012_DGD.txt

http://www.swpc.noaa.gov/ftpdir/latest/DGD.txt

There are a few relatively high numbers, but nothing like what we observed and sometimes suffered with two decades ago.

A glance at this graph shows how far down we were on cycle 22 during 1994:

http://standeyo.com/Geo_Solar/Solar_Cycles_22_23/cycle_22_review_01.gif

By the way, the exact location for the magnetometer which generates the college A and K index is at 64.8742 degrees North latitude and 147.8597 degrees West longitude, roughly one half mile northeast of Smith Lake, 400 yards south of Yankovich Road, and one half mile east of Miller Hill Road in Fairbanks. This is about 117 miles or 188 km south of the Arctic Circle.

You can see photos of the geomagnetic observatory at http://geomag.usgs.gov/monitoring/observatories/college/#photos and also at
http://www.bing.com/maps/default.aspx?cp=64.8742|-147.8597style=hlvl=17

Note on the overhead view on Bing Maps you can zoom in, and by clicking on Aerial, then the Bird's Eye dropdown you can see highly detailed images from four different directions. Just click on the arrows outside the compass rose in the upper right to see the observatory from a point of view in each direction.

Dave Greer, N4KZ of Frankfort, Kentucky wrote about 10 meter openings on the autumnal equinox, last Sunday.

"Ten meters was open to southern Europe and South Africa on the morning of September 22, the first day of fall. For the past couple of weeks, various European operators had been telling me on lower bands after I got home from work that 10 meters had been open to the States earlier in the day. But I was at work in each instance and missed out. So I made an effort on Sept. 22 to be on the band and it didn't disappoint. I copied numerous stations but primarily they were from France and Spain. I copied a British station but he was weak. I worked S58WW at 1510 UTC and he had a good signal but not as strong as others. CU7MD from Azores was copied too but with several prior QSOs in our logs, I let others work him. ZS3Y from South Africa had a big signal as did EA8YB in the Canary Islands. But I passed on them as well because of our previous QSOs on the band."

"But my most interesting QSO on Sept. 22 was with F4DSD in France. I think they call this the 10-meter deja vu mode of propagation because Mario and I had worked exactly one year earlier. And I do mean almost exactly a year ago. Our two QSOs, both on 10 meters on Sept. 22, occurred in 2012 and again in 2013 and were only 12 minutes apart in time and only 5 KHz apart in frequency. Now that really is deja vu!"

Thanks, Dave. That really must have been an odd feeling and quite a fun topic of conversation.

You may be surprised to hear of 10 meter openings given the paucity of sunspots, but given seasonal variations, right around the equinox is the ideal time. Run a projection with a program such as W6ELprop from Dave's location (38.205 deg N, 84.896 deg W) to France, for instance, and on September 22 with low sunspot or solar flux numbers, we can see some possibilities for openings around 1530-2100 UTC, and especially between 1900-2030 UTC. But change the date back or forward a month or two, and the opening disappears.

More mail on 10 meters, from Rol Anders, K3RA in Elkridge, Maryland:
"Ten has been opening to EU from Maryland more and more, starting in mid September. I worked IW1CHX on September 11 at 1438 UTC on CW.
The KD4D team at N3HBX worked 54 EU stations on Sunday of the WAE (Worked All Europe DX Contest) on September 15. Then on September 17 I ran about 15 EU stations between 1600 and 1700 UTC. I was not on for several days, but on September 23 I worked about 25 EU stations on ten meters from 1440-1520 UTC. On September 24 I worked about a dozen EU's in the hour starting at 1640 UTC. Then on September 25 I worked about 100 EU stations between 1300-1600 UTC. On September 26 I worked about 125 EU between 1200-1440 UTC. Many Eastern Europeans and Russians, with occasional Asiatic Russian and Middle-East stations calling in. Also on September 26, with such good conditions in the morning, I checked ten meters for JA's before my sunset, and worked JM7OLW. So, the fall ten meter season is well underway.
Station is a 3 element SteppIR at 50 feet, and about 900 watts out."

Great report, Rol. And a little bit of internet searching shows JM7OLW may have been using his 7 element 10 meter Yagi at 100 feet.
That must help. Check out the evidence and maybe guess which antenna at http://www.geocities.jp/jm7olw_suke/ . I wouldn't be surprised if he were using a half-wave dipole on his roof.

At the last minute, early Friday, we received this VHF report from Lawrence, GJ3RAX, in Jersey, one of the Channel Islands. He wrote, "The

VHF bands over here were a bit more interesting this week. A tropo opening had been predicted due to the high pressure region and that happened on Monday. I was not able to spend very much time on the radio but I was on for an hour or so during the early afternoon and again from 11:30 pm at night. My afternoon QSOs were into Germany at distances of between 600 and 700 miles. Most were on 2 m and one on 70 cm. The later QSOs got me into Germany again on 2 m and 70 cm and also Switzerland on both bands which was about 440 miles. I tried with some of them on 23 cm but nothing was heard this time."

"One of my friends in Guernsey said that he had a large pileup on 23 cm with quite a lot of countries worked. He has a tower with much higher gain antennas than my log periodic and a better take-off to the east where I am looking at the local school building which is about 100 yards away."

"One of the members of the VHF and UHF group said that he was too far north, being in Scotland, to be able to take advantage of that opening which seemed to be mostly at my latitude."

"On Tuesday I was not hearing anything on those bands. During the evening there was an RSGB contest on 6 m which ran from 8 pm to 10:30 pm BST. Normally I would be lucky to get a couple of QSOs but, after starting late at 9 pm, I had 17 QSOs. Most were to England with one GW, one GJ and two in GU. The best distance was 299 miles which is normally not a good distance for me on 6 m. Typical 6 m QSOs are much closer or much more distant during the Sporadic E season but that is now over."

"I am anticipating more and better tropo openings during the next month as I used to find them best during October each year. Last year when I had just got back on those bands in November I caught one opening when I worked into Germany on 2 m, 70 cm and 23 cm."

This weekend is the CQ World Wide RTTY DX Contest. They have a nice countdown clock along with rules at http://www.cqwwrtty.com/. As I write this early Friday morning, the clock shows the contest starts in 16 hours.

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 September 19 through 25 were 85, 85, 79, 98, 65, 56, and 61, with a mean of 75.6. 10.7 cm flux was 107.9, 108.8, 110.3, 111.2, 107.8, 110.2, and 111.1, with a mean of 109.6.
Estimated planetary A indices were 11, 6, 7, 5, 5, 9, and 4, with a mean of 6.7. Estimated mid-latitude A indices were 14, 5, 8, 6, 4, 9, and 4, with a mean of 7.1.

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