

Rambler

Newsletter of the
Ottawa Valley Mobile
Radio Club
Incorporated



Jan 2013

Edition 57

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Solar Activity and Wireless Communications

By : Michel Barbeau, VE3EMB

Summer 2012, one could read in
The Ottawa Citizen the news item

*Solar storm headed to Earth
but few power grid
problems expected,*

*The Associated Press July
13, 2012.*

The day after in The Calgary
Herald we had,

*Massive blast of radiation
from a huge solar flare
headed for Earth,*

*The Canadian Press July
14, 2012.*

The news release follows with

*Solar radiation that NASA
warns could temporarily
disrupt satellite
communications and power
grids.*

Solar activity is a cause of wireless
communications impairments.
Indeed, solar activity creates
magnetic disturbance. This
magnetic disturbance interferes
with wireless communications
conditions. It amplifies the level of
noise and augments absorption of
signals.

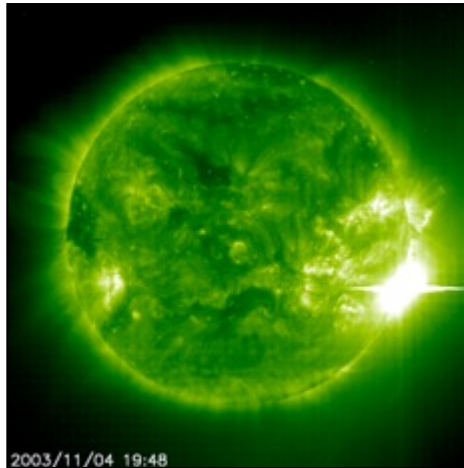


Figure 1: The big one (picture
courtesy of ww.esa.int).

Intense solar activity results in
Coronal Mass Ejection (CME). A
CME is a massive burst of solar
wind and magnetic fields rising
above the solar corona, i.e., the
atmosphere of the Sun. Figure 1 is
a picture of the Sun showing a huge
explosion, bottom right. This is the
largest CME recorded in history. It
has been named the big one. It
happened November 4, 2003. The
explosion was so large that it
saturated the solar activity detectors
of that time

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Meeting Dates

Club Meeting:

January 17th

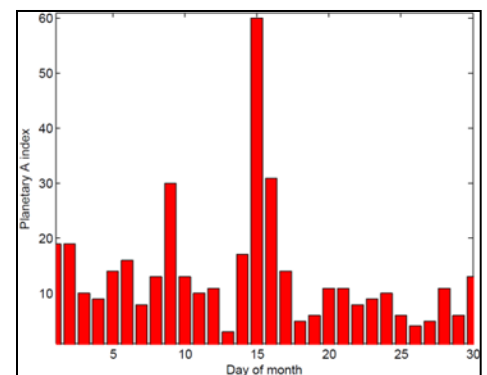


Figure 2: Planetary A index
during the month of July 2012
(data source:
[www.arrl.org/wlaw-bulletins-
archive-propagation](http://www.arrl.org/wlaw-bulletins-archive-propagation)).

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147.300 MHz(+)

444.200 MHz(+)

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VE3JW

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Canada Science & Technology
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The Rambler is the official newsletter of the Ottawa Valley Mobile Radio Club Incorporated and is published 11 times a year (monthly, except for July). Opinions expressed in the Rambler are those of the authors and not necessarily those of the OVMRC, its officers or its members. Permission is granted to republish the contents in whole or in part, providing the source is acknowledged. Commercial use of the contents is expressly prohibited.

Submit articles to the editor or by e-mail to:

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The measure of the effect on the Earth of solar winds generated by CMEs is the Planetary A Index. Between 48 and 79 is considered to be a minor magnetic storm. Wireless communications can potentially be affected. From 80 to 139, it is a major storm. Between, 140 and 399 is a large storm. A storm with an A Index from 400 and above likely causes a communications blackout in the HF range (3 MHz to 30 MHz), damages satellites, such as the GPS satellites and their signals. On the day of the big one, the Planetary A Index was 31 and down on the following few days. Solar energy actually swept the Earth 16 days after, on the 20th when the A Index peaked at 117. It was not so high

because the CME source was pointing away from the Earth. The explosion was not aiming at the Earth. It was nevertheless, in an excellent position for taking pictures (special photography equipment required). Figure 2 shows the evolution of the A Index during the month of July 2012.

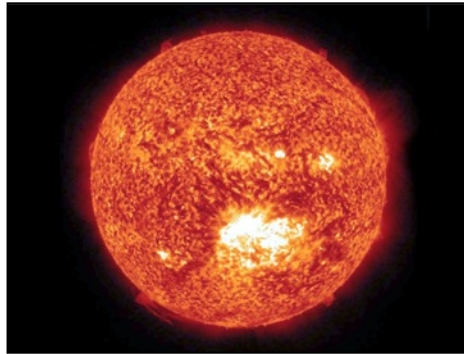


Figure 3: CME of July 12, 2102 (picture courtesy of AP Photo, National Post).

On July 12, a CME occurred at the lower centre of the Sun, see the photo of the eruption in Figure 3. A solar storm hit the earth on the 14th. The Planetary A Index on the 15th peaked at 60. It is considered to be a minor magnetic storm. Storms of that magnitude typically occur several times a year.

RAC Bulletin 2012-072E - Regulations Amending the Contraventions Regulations

2012-12-22

There has been an announcement in the Canada Gazette as to changes in the Contraventions regulations concerning the enforcement of the Radiocommunication Regulations.

These changes will allow peace officers including Municipal, Provincial and RCMP police officers to issue tickets for certain offences under the Radiocommunication Regulations.

The changes may be seen at:

<http://www.gazette.gc.ca/rp-pr/p2/2012/2012-11-21/html/sor-dors236-eng.html>

Radio Amateurs of Canada is the national voice for Amateur Radio in Canada. Our efforts not only promote the Amateur Radio Service but protect it from regulatory interference that may lead to less capability to provide emergency communications. Not already a RAC member? Why not join today at www.rac.ca and find out about the many benefits our members enjoy across the country and the world beyond.

Bill Gade, VE4WO
Regulatory Affairs

CLUB POTLUCK DINNER DECEMBER 20, 2012



Photos courtesy of: Joe Lemieux, VE3EUS

This space available for your article related to Amateur Radio

Submit to Robert Cherry

**2012 – 2013
Meeting Dates**

Club Meeting Date:

- January 17th
- February 21st
- March 21st
- April 25th
- May 16th
- June 20th

Rambler deadline

Meeting date minus 13 days

- February.....8th
- March.....8th
- April.....12th
- May.....3rd
- June.....7th
- Jul/Aug.....9th

Please submit articles for the Rambler to the editor:

[Robert Cherry](#)

No later than the deadline for the desired edition.

**February Rambler
submission deadline is:**

Friday, 8th February

Ottawa Valley Mobile
Radio Club,
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MEMBERSHIP FORM

- The membership year starts in September and runs to the end of August of the following year.*
- Regular membership is open to licensed amateurs.*
- Associate membership is open to all unlicensed radio enthusiasts.*
- Membership includes an e-mail subscription to the Club newsletter, the OVMRC Rambler.*

Date: **PLEASE PRINT**

RENEWAL NEW CHANGE OVMRC NAME TAG (COST \$10.00) No YES

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City	Province	Postal Code
Home Phone	Work Phone	E-mail Address
Are you a member of Radio Amateurs of Canada (RAC) Yes <input type="checkbox"/> No <input type="checkbox"/> RAC ID: _____ Expiry Date: / /		

Full Membership (Not a Member of RAC) \$35.00/year
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Associate Membership (Unlicensed) \$15.00/year

Amount Enclosed

\$ _____

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Current Occupation:
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COMMENTS

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