

The Rochester VHF Group

The VHF



Journal

Volume 62, Issue 1

Sept, 2010

The next regular meeting of the Rochester VHF Group will be Friday, September 10, 2010 7:30 PM

Spencerport Wesleyan Church
2653 Nichols St., Spencerport

Map and directions in back

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Dish Install at WB2BYP

The Chairman Speaks! Dave Hallidy K2DH

Groupers: Well, I can tell by the rapidly cooling temperatures that summer has ended and it's time to restart RVHFG activities for the next year. I hope you all had a great summer - for once we actually had a REAL summer, with lots of sunny days and hot temperatures (I know, I know - not everyone likes that, but hey - just think how great that is compared to the freezing, snowy weather of January and February!). Anyway, it was good to see many members at the Hamfest this year, and while I didn't find any treasures there to take home, I'm sure many of you did - the flea market was huge! Speaking of hamfests, what to me is pretty much the last one of the year is coming up - the Elmira Hamfest, at the end of September. It's worth attending - always lots of fun and a great flea market. I'll be there!

What did you do with your summer, ham radio-wise? Speaking for myself, unfortunately I did not do much. Work has gotten in the way of my hobby and I know that's true for many of us. I was unable to participate in the June VHF contest, the July CQ contest, the August UHF contest, and the first weekend of the 10GHz and Up contest. So, I'm sad to say, I'm Zero for Four. **Continued....**

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Editor: Tom Jennings, KV2X

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The Chairman Speaks! continued...

...I'm hoping to get out for the second weekend of the 10GHz contest, but time will tell. I hope you all did better than I did and were able to find time to get on the air. I understand that June had lots of 6m Es openings, but once again, I missed out due to other commitments.

At the end of last season, the RVHFG elected a new slate of officers for the upcoming year. In case you missed the roster, here it is: For Chairman, Dave Hallidy K2DH will serve once again. For Vice-Chairman, John Stevens WB2BYP will serve a second term. Tom Jennings KV2X (also our Journal Editor) will be our new Secretary/Treasurer, and for the position of Even Year Director, Bob Nezelek W2CNS will serve. John Gilley W3OAB continues as Odd Year Director and Bill Rogers K2TER as Past Chairman. This is a great team of officers and they deserve your support through the next year.

What projects have you been working on? I'm currently getting my 2304 equipment ready for EME and while I missed the opportunity to try it out this past weekend during the Microwave portion of the ARRL EME contest, I hope to have it operational in a month. I've also been winterizing my dish mechanics so they'll survive another winter without any failures. The club would like to hear of your projects, no matter how far advanced (or not) they are - please try to put something together for Tom to put into the Journal, he loves to include the things we are doing.

I received a very thoughtful email from Ev W2EV earlier this summer with some ideas for next year's programs and club activities. I'm going to present them to the BoD and hopefully we'll be able to implement some of them and spur some greater interest and activity. If YOU have ideas, no matter how "off the wall" you think they might be, **PLEASE** get them into the hands of a club officer. We want the club to come out of its state of "hibernation" and back to being one of the most active VHF+ clubs in the nation, and we need your help to do it. The new club website is a good first start towards this, but it's only a beginning - we need your help!

Our next meeting is on Friday September 10th, 2010 at 7:30pm at the Spencerport Wesleyan Church. There's a map included with this Journal to show you where we meet if you haven't been there before. Please plan to attend our kick-off meeting for 2010-2011. Thanks!

73

Dave Hallidy K2DH

Secretary Report

General Meeting May 2010 of the Rochester VHF Group

Called to order at 7:45 PM

Introductions:

Impromptu discussion of KP4AO stories ensued.

John Gilley (W3OAB) played an audio file of his KP4AO reception with no preamp and a hand adjusted FO22.

Dave Hallidy (K2DH) talked about his exploits in ensuring he got in the log including traveling 60 miles to get a MOSFET preamp to replace the one he blew up just prior to

KP4AO coming on line. He did get in the log after 3-4 calls. Dave also used a ladder method for antenna elevation and 450W of power. He is waiting on the QSL card.

Attendees: WB2QCJ, WB2BYP, K2OS, K2TER, KV2X, wb2gfz Fred, W2EV, WB2YJH, AB2YI, W2UAD, W3OAB

Election Night!

Old Business:

John and Dave discussed last meetings AF1T instructional video on antenna patterns and constructions. John WB2BYP shared the NEWS

Banquet at Nick's Seabreeze was a good turn out. It was afternoon on a Saturday about 50 turn out

- Website – Dave stated that the website is very nice from a usability stand point. Dave asked for content to be loaded. It is very easy to do.
- Beacon Status – Beacons are off the air because they cause interference to N2MLH's radios. We need to consider a new beacon site. We are actively looking for a host for the beacons.
 - Ken W2UAD suggested the group contact KC2PCD for a potential beacon site at his remote property.
 - Dean WB2QCJ suggested multiple hosts.
 - Dave K2DH If we had an offer of any kind that would be a good start. Dave asked the group to pass this along.
 - Ev W2EV inquired about the system components and power requirements.

New Business:

- Hamfest – Hamfest will be at the Barnard carnival grounds.
 - Dave related that the board decided to collocate with RDXA outside but not have an interior presence.
 - Need to make sure we get the word out to the group to come to the outdoor location
 - Bill K2TER will have his rover as well as John WB2BYP with the mother ship.
 - Fred WB2KFZ mentioned that RARA members get in free

John W3OAB raised:

- Ethernet for the church – we can run the cable after the meeting?

Field Day – W2RDX – Bill's Rover will be at the Field Day site. Tom KV2X work us on all CW and SSB/FM. Use a sidetone on FM for CW contacts.

Motions to Accept Journal content:

Minutes from the April meeting – motion to KV2X, WB2BYP
Treasurer's report - motion to KV2X, WB2BYP

Elections

Nominations from the floor:

- Chairman – none
- Vice Chairman – none
- Secretary/Treasurer – none
- Even Year Director – none

Closed the Nominations

Candidates:

Chairman – Dave K2DH

Vice Chairman – John WB2BYP

Secretary/Treasurer – Tom Jennings KV2X

Odd Year Director – John Gilley, W3OAB

Even Year Director – Bob Nezelek, W2CNS

Past Chairman – Bill Rogers, K2TER

Technical Advisor – Dean Keyser, WB2QCJ – needs to be voted on by the incoming board at the hamfest – super majority of the 6 is required.

Motion by W2UAD to have acting Secretary K2TER cast a single vote by acclamation. This was completed at 8:35 PM.

Motion to close the business portion of the meeting. K2DH/WB2BYP

Results:

Chairman – Dave K2DH

Vice Chairman – John WB2BYP

Secretary/Treasurer – Tom Jennings KV2X

Odd Year Director – John Gilley, W3OAB

Even Year Director – Bob Nezelek, W2CNS

Past Chairman – Bill Rogers, K2TER

Technical Advisor -- to be appointed by incoming board – prospective candidate – Dean Keyser, WB2QCJ

Respectfully submitted by Bill Rogers, K2TER

**Rochester VHF Group
Treasurer's Report – August 2010 (includes May, June, July)**

CHECKING ACCOUNT

<u>Previous Balance</u> (as of 4/27/10):	\$ 2,070.09
Income:	
Membership dues	\$ 135.00
Expenses:	
Web Hosting	\$ 180.00
<u>Current Balance</u>	\$ 2,025.09

*Respectfully submitted,
Tom Jennings, KV2X, Treasurer*

The Vice Report September 2010

Welcome all to the 2010-2011 season for the Rochester VHF Group.

As RVHFG Vice Chairman (yup, the vice guy) I am looking forward to another exciting year, and officially welcoming one and all of you to please come forward and give me your ideas, constructive criticism and energy. Send me email at wb2byp@arrl.net or you can phone me up at 585-415-4973, or better yet find me on the air for a chat.

In September we are going to recap the activities of the summer with several short presentations. I encourage one and all to bring in a sample of what you have been doing, or anything from a few images to a full-fledge PowerPoint to the meeting on Friday September 10th. I'll be bringing in a series of images from the installation of the 28 ft dish here at Area 26, still a work in progress. In October, Jeff Ach, RVHFG HF/VHF/UHF/SHF contester extraordinaire will be in to talk a bit about what is new in the technology of WIFI remote antenna rotor controls and other new products from the Green Heron Engineering world. In November, we will have Fred Miller WO2P and Judy Stonehill N2KXS to demonstrate how they have integrated Amateur Television (ATV) into the resources available for local emergency communications. In December we will have our yearly Preamp and Converter Tune-up

Session, with a bit of a twist, in that we will be incorporating antenna swept measurements into the mix,. Stay tuned for more on that topic. We hope to see some of the Rovers in for the pre-contest warm up in January too, and a few other ideas taking shape for some visiting subject matter experts over the winter and spring months. Watch the newsletter, save the RVHFG website in your favorites and check in to the Monday and Thursday night Rochester VHF Group SSB nets at 2100L on 144.260 USB for the latest info and updates.

The net has been hanging in there, with stations like Ken, W2UAD, Al, KA2EKI, Mike, WB2SQS, Bill KB2BLS, Bob W2CNS, Dave K2DH, Mark, K2CAN, Rich N2TKU, John N2DCH and Ron KE2LW pretty well holding up the weekly banner. I've made a change in the setup used to cast the net, using a lower gain antenna to decrease the number of stations missed by being too directional, and I think it has made an improvement. I encourage all to check in and see how equipment is working. If there is interest, we go up the bands to 432 and 1296 as time permits. 2100L EST/EDT for 144.260 USB and 2130L for 50.200 USB.

Did you catch the sporadic E on 2M June 21 2010? Reports are that this was one of the best openings in decades. What did you work, or hear was worked from the area?

I'm looking forward to a lot of new activity this year. Gloria and I hosted an antenna erection party in late July and had a blast. A lot of hands were available and made it such that the install went smoothly and safely. I hope to have the antenna steer-able in September enough to participate in the fall EME activity weekends. More on that at the meeting.



Antenna erection party at WB2BYP on 24 July 2010. From left to right, Jim Hastings W2RFM, Bill Rogers K2TER, Frank Pollino K2OS, Dave Marsh, Bob LaFrance N9NEO, Bob Nezelek W2CNS, Charlie Mills K2LDU, Jim Grady, Andy Hill (the crane guy), Gloria, John WB2BYP, Dave Hallidy K2DH, Jerry Robinson N4KJ, Dick Kreutter WA2IKC, and taking the picture was Diane Hallidy. Fred Miller WO2P helped with a lot of the construction work.



Photo credit Bill Rogers K2TER



Photo credit Bob Nezelek W2CNS



Upcoming events:

September VHF Contest: 11 -13 September 2010, info:

<http://www.arrl.org/september-vhf-qso-party>

2nd Weekend 10 GHz and Up Contest 18-19 September 2010, info:

<http://www.arrl.org/10-ghz-up>

Hope to work you on the bands.

John

wb2byp

Summer Contest Activity

KA2LIM – ARRL June Contest

The June 2010 VHF contest saw the KA2LIM contest site in good shape with everything working and ready to go. The contest started at 1800 UTC on Saturday and 6 meters was the hot band with opening to all parts of North America, Central America and the Caribbean. Then Murphy snuck in the back door, with the audio output on the 432 station so low it was difficult to hear anything. A quick swap of transceivers and 432 was back up and running without another glitch.

Then 'ole Murphy moved to the 222 position. The relay in the transverter started hanging up in transmit again in spite of the correction made over the winter per the directions of Steve at DEMI, and the addition of fans for cooling. So Ken made a trip home to retrieve the old Yaesu FT-736R. 222 was off the air for a bit over an hour, but once back on it was working fine with the exception of the voice and CW keyer not keying the amplifier automatically, had to do the keying manually.

Six Meters stayed hot with 2 Meters also seeing some E's. We worked the entire west coast and everything in between along with several DX contacts on 6M. I might add here that all contacts were answers to our calling CQ Contest. Our longest 2M contact was into Alabama, grid EL49. With 6 and 2 having such good conditions, 222 and 432 suffered in the number of contacts.

During the contest between 7 and 9 pm local time on Saturday and Sunday we called CQ and looked for FM contacts on 2, 223 and 440. The KA2LIM contest group sponsored a FM simplex contest within NY and PA to encourage those who are FM bound to find out how far they can transmit and how many can be worked without using a repeater.

There were six of us available at all times and a total of eight for the entire contest. The group consisted of Rob-KB2YCC, Al-W9KXI, Dave-N2LID, Larry-WA3CSP, Gregg-NX2W, Lu,-N2SLN, Walt-N2IK and Ken-KA2LIM. Also some guests who are interested in VHF/UHF visited the site. They were: Chris-AC2CS, Dave-N2DLP and Alex-N3NP.

I shall mention the food department here: The usual fine selection was brought by everyone. Subs, chili, cookies, sweet rolls, burgers, hotdogs, potato salad, macaroni salad, cold slaw, chips and dip, water, soda and of course homebrew to wash it all down with. On Sunday morning Dave put on another fine breakfast consisting of French toast with real maple syrup, scrambled eggs, bacon and coffee. WOW! We sure do eat good.

Rob stayed up until after 4 am, local time on Sunday morning while everyone had gone to bed. Rob was still hearing 6 meter beacons but no activity. Ken was up at 6am on Sunday and back at calling CQ contest. Soon Walt and Al appeared then Gregg and we were back at it. Six was really sporadic on Sunday, not as solid as Saturday but we still kept putting new multipliers in the log. With less activity on six, the contacts on the upper two bands began to pick up and we added more multipliers.

Some time during this endeavor, we pulled up the new microwave tower with the antennas on it. But, 'ole Murphy struck again and the stainless steel mast bent on the way up. Ken climbed the tower and attached a rope to the mast in order to pull on it and bring it back to a somewhat straight position. Later in the day as Ken was pulling on the rope to bend the mast slightly, the mast gave way and in slow motion, proceeded to fold over. Thus we got the photo for our QSL card for the June contest.

A new antenna switch system was installed on the 6M station which allows us any combination of the 3 antennas. A definite plus was achieved here. As conditions changes we were able to change to the antenna or antenna combination that worked the best. We added a rotator to the 2M LVA stack, thus allowing the LVA to be rotated from the operating position. Another good move. Rotors will be added to the 222 and 432 LVA's before the UHF contest.

The last entry went into the log at 0259 on 2M and another contest became history as we achieved our best score to date. The break down is as follows:

Band	Q's/Grids
50	645 / 170
144	295 / 52
222	65 / 28
432	74 / 27

Total raw score: 337386

We finished **5th** in the country with the 4 ahead of us having better and longer openings.

Lu - N2SLN did a spread sheet on our 6M contacts and it showed that we hit VUCC in 7 hrs and 12 minutes. We worked 39 states and 5 DX during the contest. Ken also did a breakdown on the other 3 bands:

144 - 52 grids, 15 states and Canada
222 - 28 grids, 11 states and Canada
432 - 27 grids, 11 states and Canada

The best thing of all: **We had fun!** See you in the CQWW VHF contest in July.

Ken
KA2LIM

K2QO/R -- ARRL UHF Contest

It was late Thursday when I discovered that I'd have the time to prep and do the contest. Given the time constraints I built the rover as a lower 6 band affair with one mast and rotor. I have never done more than a few Qs on 222 in this contest and no idea what to expect as far as activity and propagation. When you add in the fact that this contest is only 24 hours, you run into logistics issues regarding route planning. So, how did it all work out?

My first serious August UHF was a success! And a special thanks to VE3CRU/R, VE3SMA/R, and the KA2LIM super station guys, without whom this contest would have been a bust. Special mention goes to W3OAB. To provide me with 222 Qs, John took his milliwatt HT, donned his tower climbing equipment, and climbed his tower! This is serious ham dedication. Thanks John!

Call: K2QO/R
Operator(s): K2QO
Station: K2QO
Class: Rover LP
QTH: Rover
Operating Time (hrs): 14
Club: Rochester VHF Group

73,
K2QO/R

Summary		
Band	QSOs	Mults

222	22	9
432	28	9
903	6	5
1.2	10	7
2.3	5	4
3.4	3	3

Total:	74	41
Total Score =		14,022

KV2X – ARRL June, CQ VHF, ARRL UHF Contests

I managed to work three contests this summer with the best score in June. I really wanted to help KA2LIM but could not get the time so I operated when I had a chance from home. The little time I spent on the working the contests resulted in whopping 375 points. I made 24 Qs on 6m, 2m and 432 which included 11 grids.

The CQ VHF contest was a bust! That weekend we were camping in FN14 at Long Point State Park on Chaumont Bay, west of Watertown. I had my IC706 with me and a wire antenna so I decided to give it a try. No Qs but I did hear K2ERG and VE3MMQ.

The ARRL UHF Contest was just a little better – 1 Q on 432 cw! Again we were camping and located at the Evangola State Park, near Angola, NY and on the shores of Lake Erie.

Tom, KV2X

N2YB – ARRL UHF Contest

I made a few Qs about 10 or 12. EM89 and EN82 were some of the best DX.

Mark

ARRL September VHF QSO Party

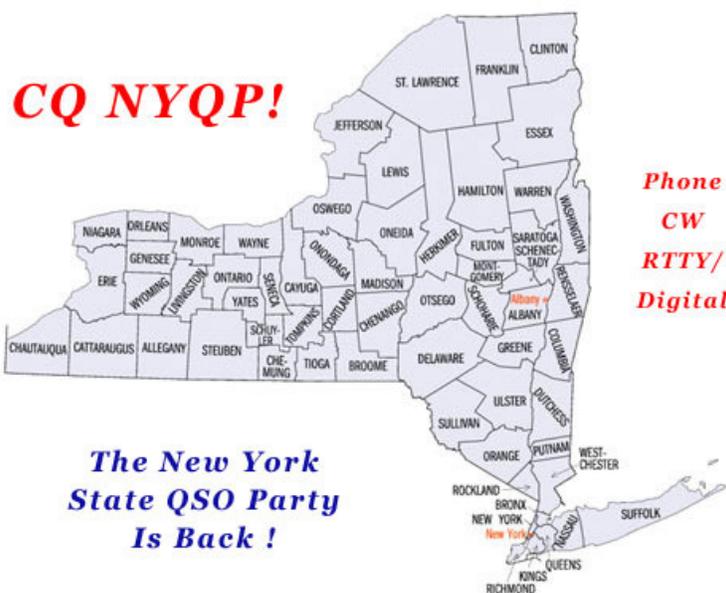
Begins: 1800 UTC (2 PM EDT) Saturday

Ends: 0300 UTC (11 PM EDT Sunday) Monday (September 11-13, 2010)

Object: To work as many amateur stations in as many different grid squares as possible using authorized frequencies above 50 MHz.

We encourage all to operate during the contest using all the modes that your station is capable of operating. Call CQ often CW, SSB, and FM. Listen for all the rovers and try to work them up all the bands. Always say: “Any more bands?” Don’t forget to submit a log! Even if only 1 Q.

New York QSO Party 2010



The date of the 2010 NYQP:

Saturday, Oct. 16, 2010: 1400 UTC thru Oct. 17, 0200 - 12 Hours

(Third Saturday in October)

FREQUENCIES (suggested) & MODES:

- **Phone** 1.870, 3.825, 7.200, 14.290, 21.350, 28.400, **6m, 2m and higher**
- **CW** 1.820, 3.550, 7.050, 14.050, 21.050, 28.050, **6m, 2m and higher**
- **RTTY** or other **Digital** modes (PSK, Olivia, etc.), use the ARRL Band Plan

Why not get on the VHF and Higher bands to earn VHF Plaque!

The New York QSO Party announces Rookie Operator class!

The NYQP has instituted a new entry class for operators that have received their Amateur Radio ticket since January 1, 2007. The Rookie Operator Award will feature a NYQP plaque to the operator with the best NYQP score for 2010.

Compete with others rookies that are also new to our great hobby. Let the folks with towers, amps and experience fight among them selves! Just follow the NYQP rules:

<http://www.nyqp.org/rules.php>

And enter as a Single Operator using Low Power. We will take care of the rest.

With a QSO Party primarily for US/Canadian stations, signals are sure to be strong. See if radio contesting is for you (it was for me!). Learn about propagation (HF, VHF, UHF & up), search & pouncing, running, logging software and more. You will finish a better operator... guaranteed.

This award can only be presented to an operator once. Will the very first honor be yours? Learn more at: <http://www.nyqp.org/faq.php>

Get ready for the NYQP! October 16, 2010. <http://www.nyqp.org/>

de Rick W1TY/W2RTY

Extended solar minimum linked to changes in Sun's conveyor belt

A new analysis of the unusually long solar cycle that ended in 2008 suggests that one reason for the long cycle could be a stretching of the Sun's conveyor belt, a current of plasma that circulates between the Sun's equator and its poles. The results should help scientists better understand the factors controlling the timing of solar cycles and could lead to better predictions.

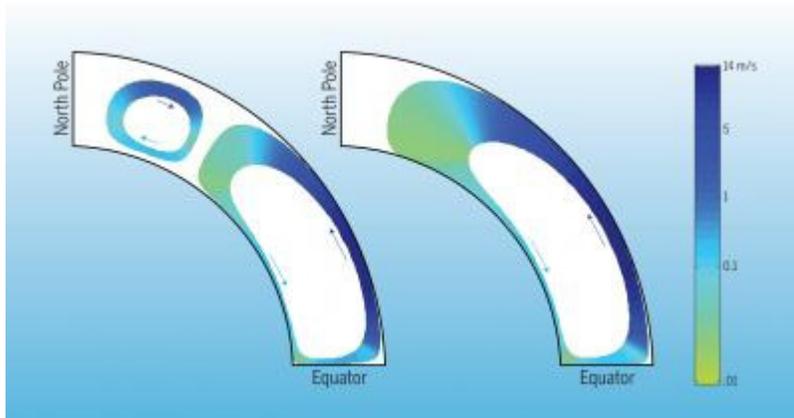
The study was conducted by Mausumi Dikpati, Peter Gilman, and Giuliana de Toma, all scientists in the High Altitude Observatory at the National Center for Atmospheric Research (NCAR), and by Roger Ulrich at the University of California, Los Angeles. It appeared on July 30 in *Geophysical Research Letters*. The study was funded by the National Science Foundation, NCAR's sponsor, and by NASA's Living with a Star Program.

The Sun goes through cycles lasting approximately 11 years that include phases with increased magnetic activity, more sunspots, and more solar flares, than phases with less activity. The level of activity on the Sun can affect navigation and communications systems on Earth. Puzzlingly, solar cycle 23, the one that ended in 2008, lasted longer than previous cycles, with a prolonged phase of low activity that scientists had difficulty explaining.

The new NCAR analysis suggests that one reason for the long cycle could be changes in the Sun's conveyor belt. Just as Earth's global ocean circulation transports water and heat around the planet, the Sun has a conveyor belt in which plasma flows along the surface toward the poles, sinks, and returns toward the equator, transporting magnetic flux along the way.

"The key for explaining the long duration of cycle 23 with our dynamo model is the observation of an unusually long conveyor belt during this cycle," Dikpati says. "Conveyor belt theory indicates that shorter belts, such as observed in cycle 22, should be more common in the Sun."

Recent measurements gathered and analyzed by Ulrich and colleagues show that in solar cycle 23, the poleward flow extended all the way to the poles, while in previous solar cycles the flow turned back toward the equator at about 60 degrees latitude. Furthermore, as a result of mass conservation, the return flow was slower in cycle 23 than in previous cycles.



An NCAR model of magnetic flux below the Sun's surface, developed by Mausumi Dikpati and colleagues, shows the extended reach of flux transport during the solar cycle that ended in 2008 (right), compared to the previous cycle (left). The larger loop is believed to be related to the extended duration of the cycle. (Image courtesy UCAR.)

In their paper, Dikpati, Gilman, and de Toma used simulations to model how the solar plasma conveyor belt affected the solar cycle. The authors found that the longer conveyor belt and slower return flow could have caused the longer duration of cycle 23.

The NCAR team's computer model, known as the Predictive Flux-transport Dynamo Model, simulates the evolution of magnetic fields in the outer third of the Sun's interior (the solar convection zone). It provides a physical basis for projecting the nature of upcoming solar cycles from the properties of previous cycles, as opposed to statistical models that emphasize correlations between cycles. In 2004, the model successfully predicted that cycle 23 would last longer than usual.

According to Dikpati, the duration of a solar cycle is probably determined by the strength of the Sun's meridional flow. The combination of this flow and the lifting and twisting of magnetic fields near the bottom of the convection zone generates the observed symmetry of the Sun's global field with respect to the solar equator.

"This study highlights the importance of monitoring and improving measurement of the Sun's meridional circulation," Ulrich says. "In order to improve predictions of the solar cycle, we need a strong effort to understand large-scale patterns of solar plasma motion."

References

<http://www2.ucar.edu/news/extended-solar-minimum-linked-changes-suns-conveyor-belt>

Dikpati et al. **Impact of changes in the Sun's conveyor-belt on recent solar cycles.** *Geophysical Research Letters*, 2010; 37 (14): L14107 DOI: [10.1029/2010GL044143](https://doi.org/10.1029/2010GL044143)

New solar prediction system gives time to prepare for the storms ahead

A new method of predicting solar storms that could help to avoid widespread power and communications blackouts costing billions of pounds has been launched by researchers at the University of Bradford.

Solar storms involve the release of huge amounts of hot gas and magnetic forces from the surface of the sun into space at around a million miles an hour. The next major solar storms are expected in 2012-13 as part of the sun's 11-year weather cycle. A 2008 US National Academy of Sciences report estimated that modern reliance on electronics and satellite communications means a major storm could cause twenty times more economic damage than Hurricane Katrina.

Although major solar eruptions (coronal mass ejections) normally take several days to reach the Earth, the largest recorded in 1859 took just eighteen hours. Solar flares - which can also cause significant disruption to communications systems - take just a few minutes. So advance warning is of vital importance to enable steps to be taken to avoid the worst effects of solar activity.

Up to now, solar weather prediction has been done manually, with experts looking at 2D satellite images of the sun and assessing the likelihood of future activity. But the team from the University of Bradford's "Centre for Visual Computing" (<http://www.visual-computing.brad.ac.uk>) created the first online automated prediction system, using 3D images generated from the joint NASA/ESA Solar and Heliospheric Observatory satellite (SOHO). The system can be seen at <http://spaceweather.inf.brad.ac.uk/>.

Already in use by both NASA and the European Space Agency (ESA), the Bradford Automated Solar Activity Prediction system (ASAP) identifies and classifies sun spots and then feeds this information through a model which can predict the likelihood of solar flares. The system is able to accurately predict a solar flare six hours in advance and the team is working to achieve a similar accuracy for the prediction of major solar eruptions in the near future. There is a link to **download** ASAP at <http://spaceweather.inf.brad.ac.uk/>.

Dr Rami Qahwaji, who led the EPSRC-funded research, says: "Solar weather prediction is still very much in its infancy, probably at about the point that normal weather forecasting was around 50 years ago. However, our system is a major step forward. By creating an automated system that can work in real time, we open up the possibility for much faster prediction and - with sufficient data - prediction of a wider range of activity. With NASA's new Solar Dynamic Observatory satellite which came into operation in May, we have the chance to see the sun's activity in much greater detail which will further improve our prediction capabilities."

The ASAP model is based on historical data which was analyzed to identify patterns in the sun's activity. Dr Qahwaji is now applying for more funding to further improve the system and ensure it can be adapted to work with the latest sun monitoring satellites.

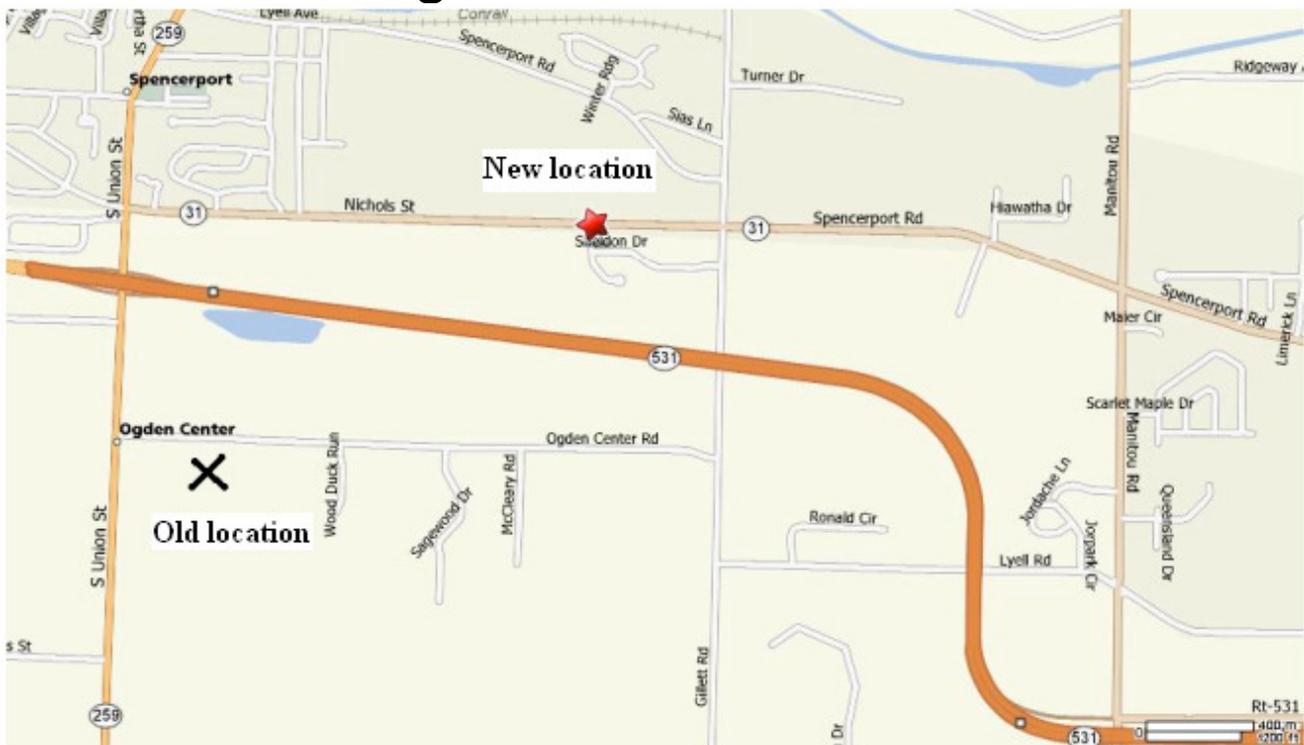
Source: http://www.brad.ac.uk/mediacentre/press-releases/Title_30791_en.php

Classified Listings

Wanted: Does anyone have a 17b2 or BIGGER single-yagi they're interested in parting with? No guarantees that I can afford your price...but if you'd like to sell locally (to me), please let me know what you have and your ask price. I have a couple of 13b2's that I could use in trade (one or both), if interested...but am willing to out-right purchase if I can afford it.

Ev, W2EV

Meeting Location and Directions



Spencerport Wesleyan Church on 2653 Nichols St. (actually Hwy. 31).

Directions from Rochester:

531W exit RT. to 259N

259N turn Rt. on 31E (first Rt. at traffic light)

Look for Spencerport Schools Bus Garage on left

**Take first Rt. on Sheldon at A-framed church, park in rear lot.
Enter gray metal door under fire escape.**