

Contact: [C. Scholl](#)

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October 2013

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A WORD FROM THE:

Administration

Accelerator Div.

ES&F Div.

Acc. R&D Div.

Operations

▶ Arrivals/Departures

 Safety Stats

Quote of the Month: - Do not trust Atoms they make up everything - unknown

NOTE FROM OUR CHAIR: Thomas Roser



This fall's NSRL run is nearing its end, again successfully operating using the EBIS source. Proton beams during the last week of the run will come from the Tandem. After the NSRL run an additional week of operations will be used for users from the National Reconnaissance Office.

The start of the RHIC run has been delayed by one month to the beginning of February to give more time for the completion and installation of the new 56 MHz superconducting rf storage cavity at the 4 o'clock IR of RHIC. In the meantime preparations are underway for two major reviews: at the end of November the latest design for a cost effective implementation of the Electron Ion collider eRHIC will be presented to the C-AD Machine Advisory Committee and at the end of January the cost and schedule for the project of Low Energy RHIC electron Cooling (LEReC) will be reviewed by a DOE panel.

[CONFERENCE PROJECTIONS DUE: DUE JANUARY 15TH](#)

DID YOU KNOW??

Check out who received an employee Service Award this year! 2013 Collider-Accelerator Dept. employees who received a Service Award are listed [here](#). Last Years Service Awards are listed [here](#).

EVENTS/SEMINARS...



Check out the [BNL Calendar](#) for upcoming events & Seminars or the [Upcoming Conferences & Workshops](#) page for workshops and Conferences happening at BNL.

Toby Miller and his wife had a baby Boy Friday Oct. 18!!

Patrick James Miller born at 8:26 am, 8lb 2oz 19.5in long at St. Charles Hospital in Port Jefferson.

Picture taken at 2 days old...



Dannie Steski was in Newsday!

Read about the Curling Club and Dannie Steski's involvement [here](#).



Nov. 14 - (Brookhaven Center|6:30) Community Advisory Council Meeting, "Open to the Public"

Nov. 14 - (Bldg 510 SSR|3:00) Particle Physics Seminar "A method for obtaining first interaction length distribution and its interpretation for extensive air showers seen by Pierre Auger Observatory" - Presented by Tolga Yapici (Michigan Tech. U.)

Nov. 19 - (ISB Bldg 735 (lobby)| 5:15) Brookhaven Women In Science (BWIS) Event - "Wine & Cheese Reception"

Nov. 22 - (Bldg 510 | 10:30) Particle Physics Seminar, "Observation of Electron Neutrino Appearance from a Muon Neutrino Beam and More", Presented by Chan Kee Jung (SBU)

Nov. 26 - (Bldg 510 LSR | 3:30) Physics Colloquium, "From Unitary Dynamics to Statistical Mechanics in Isolated Quantum Systems", Presented by Peter Petreczky (Pennsylvania State U.)

Dec. 10 - (Bldg. 510 SCR | 11:00) Nuclear Physics Seminar, "System-size dependence of open-heavy-flavor production in nucleus-nucleus collisions at $\sqrt{s_{NN}}=200\text{GeV}$ " Presented by Nicole Apadula (SBU)

Dec. 10 - (Bldg 510 LSR | 3:30) Physics Colloquium, "Big News from Small Systems: A New perspective on p(d)+A Collisions", Presented by Anne Sickles (BNL)

Dec. 12 - (Brookhaven Center | 9:30am) Blood Drive - To schedule an Apt. [click here](#).

Short training session on the new Vacuum Oxygen Deficiency Hazard (VODH) safety system at RHIC

This applies to you if you have unescorted access to the RHIC tunnel.

Please attend a short training session on the newly installed Vacuum Oxygen Deficiency Hazard (VODH) safety system. This short training session is important to your safety and to those you may escort into the area. The new detection method and helium isolation system will be discussed, which is enabling us to return the hazard classification to ODH Class 0.

Please attend any session:

Updated Picture of the Mahler Twins!



Sergey Belomestnykh is a Proud Grandfather! His Daughter Olga gave birth to Flora Natalia Saviano at 8:58am on Nov. 7th, weighing 8lbs 15.4oz.



All sessions are 11:15 AM - 12 noon, Bldg 911 Snyder Seminar Room

November 12
November 19
November 21
December 5

(A reminder will be sent as the first date approaches.)

Thank you

IN OTHER NEWS...

A SQUID Analog with a Bose-Einstein Condensate - Changehyun Ryu of Los Alamos National Lab and his colleagues have made a novel Superconducting Quantum Interference Device. Instead of superconducting electrons, the Los Alamos SQUID uses a Bose-Einstein condensate. As Harvard's Yuki Sato explains, BEC SQUIDs could serve as ultrasensitive rotation detectors [Read more..](#)

Did Climate Change Cause Typhoon Haiyan?? - The typhoon that struck the Philippines was the most powerful ever recorded on Earth. Is there a connection between climate change and the frequency and strength of superstorms? Nature's Quirin Schiermeier examines the evidence.... [Read more](#)

Suns Polarity is Getting Closer to Flipping ~ [Read about it.](#) It's almost time for the sun's magnetic field to do a flip, this happens every 11 years or so.

New Scorpion Species Discovered in Turkey - [Read about it](#)

WHAT'S GOING ON IN OUR NEIGHBORHOOD?

Interested in Cycling? Why don't join in on the .. [Piermount Bike Festival](#)

Interested in Running or Walking? Check out the [lirunning August Calendar](#) for the following events: LIRRC Cross Country 5k at Eisenhower Park, NRSP Turkey Trot, Oyster Bay Turkey Trot 5k, North Shore boys & Girls Club 5k, Tough Cookie 8k Trail Race and cookie extravaganza, Santa's Toy Trot.

For the Kids: Disney on Ice & WWE RAW (November & January) @ [The Nassau Coliseum](#).

Stony Brook Events:

White-A-Thon: Oct 28-Dec 19 (9~) Custom Teeth Whitening kit \$150.

The Lucille Ball & Red Skelton Stories: A Musical Theater Event ~ Nov. 16-Jan 12 (11:30am & 12:30pm) \$48pp

Black Friday Celebration: Nov. 29 (12-6:30pm) Celebrate the holiday shopping season with this free family event! Holiday Carolers, Cubby the Clown, Wine Tastings, Petting Zoo, and Walkie Bear & WALK Radio! Horse-drawn carriage rides will also be available for \$3/ea.

Nassau Coliseum ~

Upcoming shows: N/A

DAY AT THE VINEYARDS...

Macari Vineyard - [MATTITUCK] No upcoming events at vineyard.

Duckwalk North ~ [SOUTHOLD] No Events Posted

Duckwalk South ~ [WATER MILL] No Events Posted

Castello di Borghese Vineyard & Winery ~ [CUTCHOGUE] ** Vineyard Tours & Wine Tastings Every Thursday & Sunday @1pm & FREE Jazz Every Saturday (2~4) with Marguerite Volonts**
Dec. 7 ~ Kathryn Zukowski & Dana Kowalsick of Belle Voci

Jamesport Vineyards ~ Live Music and Oyster Bar open every weekend **
Thur~Mon 11~5

Martha Clara Vineyards - [RIVERHEAD] ~NOVEMBER~ 16 (12~3) The Brownshoe Jazz Ensemble; 17 (12~3) Ken Ellis; 23 (1~5) 2 Man Acoustical Jam; 23 (7:45pm) Comedy Festival \$25pp; 24 (1~4) JJ Jazzmataz; 29 (7pm) Black Friday Concert \$25pp; 29 (12~4) The Brothers Caldon; 30 (1~5) Keith Maguire ~DECEMBER~ 1 (10am) Vines and Canines Edu. Vineyard Walk / (1~4) Mambo Loco; 7 (2~5) Double Play; 8 (1~4) Ted Hefko & The Thousandaires; 14 (7pm) Matt Marshak Concert \$25pp

Palmer Vineyards - [RIVERHEAD] *Live Music every weekend*, *Gourmet Food Trucks Every Saturday & Sunday* Every Sunday Yoga in the Vineyard (11am) \$25 pp and Mimosa Bar *

Pindar Vineyards - [PECONIC] ~ Live Music Every Weekend NOVEMBER ~ Champagne, Chopin & Caviar Complimentary Tours

NOTE FROM OUR ADMINISTRATION: Stephanie LaMontagne-McKeon



When fiscal year 2014 started on October 1, no appropriations bills had been passed providing funding for the continued operations of the federal government. This prompted a shutdown of many federal agencies that lasted until mid-October, when the House of Representatives passed a measure providing federal funding at current levels through January 15, 2014. President Obama signed the bill that evening, and federal government operations resumed the next day, thus ending the 16 day shutdown. BNL was able to continue operations during the federal shutdown due to the sufficiency of prior year carryover funds.

We hope that Congress' next moves will address a full fiscal year 2014 appropriation, called for by mid-December. This budget uncertainty is a challenge that we have become quite accustomed to over the last several years, and we have fared well thanks for our own efforts in planning and preparedness. Until a fiscal year 2014 budget is known, we should continue to move forward keeping a careful eye constraining costs to those necessary to reach our programmatic goals. At the risk of sounding repetitive, every effort should be made to keep overtime at a minimum. In addition, we ask all supervisors to closely monitor expenses of consumables such as credit card purchases, stores withdrawals, and travel. We're grateful that in years past our staff here in C-AD have proven to have the discipline necessary to operate safely and efficiently in spite of our volatile funding environment. Keep it up!

On a separate topic, a new SBMS subject area on "Procuring Supplies and Services" was recently published. I encourage all of our staff who are involved in the process of ordering supplies, materials, equipment or services to review the recent Monday Memo article authored by John Collins: <http://intranet.bnl.gov/memo/news.php?a=24433>. Of course, questions on ordering supplies can always be addressed to me or members of the C-AD Business Operations Group.

NOTE FROM OUR ACCELERATOR DIVISION: Wolfram Fischer



The NSRL Run continues until Thanksgiving. As in previous runs a variety of beams were delivered on time and with high reliability. The RF group has commissioned a new low level rf system in the Booster, which will also allow for better bunch merges during the upcoming RHIC Au+Au run.

The start of the 4K cool-down of RHIC Run-14 is now scheduled for 3 February 2014, to allow more time for the installation of the 56 MHz SRF. This will still allow for 22 cryo-weeks before the end of June. In preparation for the RHIC Run new hardware is installed. The most important upgrade will be the new 56 MHz SRF system. The longitudinal stochastic cooling system is upgraded with new detectors and kickers, and the electron lens hardware will be complete. The field straightness of the superconducting solenoids for the electron lenses, which were built by the BNL Superconducting Magnet Division, was measured in the tunnel. Both lenses have excellent field quality.

We will have a DOE review of the Low-Energy RHIC electron Cooling (LEReC) project in January 2014. This is the largest RHIC upgrade in the foreseeable future aimed at increasing the Au+Au luminosity at and below the nominal injection energy by an order of magnitude. We plan to run for physics with this upgrade in 2018.

NOTE FROM OUR EXPERIMENTAL SUPPORT & FACILITIES DIVISION: Phil Pile



We are now approaching the end of our summer RHIC shutdown work. As you are aware we have opted to let the RHIC Run 14 schedule slip to 3 February to allow more time for installation of the new 56 MHz RF system, an important upgrade for full energy gold beams in Run 14. The plan remains the same with a short low energy run followed by a long full energy gold-gold run. If these runs go as planned and if the budget permits we should have time left for another short run with beams to be determined. We still do not have a final budget so our plans for 22 weeks of RHIC operations for Run 14 are subject to change. We have finished the preliminary engineering and installation plan for a gold foil target to be installed inside the STAR IR beam pipe. This is an important STAR R&D effort that could lead to “fixed target” parasitic running and may help in the search for the QGP phase transition critical point. The PHENIX experiment is on schedule to begin cosmic ray tests in January. Both STAR and PHENIX will sport new silicon vertex detectors for this run.

BLIP and the Building 801 Target Processing Lab (TPL) are both in a maintenance mode. A lot of effort has gone into remediation of findings from the 17-18 September DraxImage audit. DraxImage is one of our customers who purchase Sr-82 produced at BLIP. The goal of the remediation effort is to become fully compliant with “Current Good Manufacturing Practices” (CGMP) for Sr-82 production. Sr-82 is what is known as an “Active Pharmaceutical Ingredient” (API) that, once processed by one of our customers, will become part of a generator for producing the short-lived isotope Rb-82 on demand. This radioisotope is a PET isotope used to image the heart. The production of API’s comes with a set of rules (CGMP) that require much more attention to detail than research isotopes not destined for human use. The new LINAC beam raster project for BLIP has undergone a successful AIP Technical, Cost, Schedule and Management Review by an outside DOE committee. This upgrade will allow higher beam intensities on the BLIP targets with a reduced risk of target failure. The committee recommended an accelerated schedule for completion of the project (2 years instead of the proposed 3 years). This will present a challenge, given the high priority RHIC projects scheduled for completion during this period, but we will do our best to deliver the Raster project in 2 years. We are now preparing for the FY 2014 BLIP run cycle with first beam from the LINAC around mid-December. Before that there will be yet another CGMP audit, this one on 6 December by Bracco Diagnostics.

NASA sponsored NSRL experiments for the fall began on 7 October and will run through 15 November followed by a one week run in support of the National Reconnaissance Office (NRO). This week the NASA experiments are using proton beams from the Tandem to allow more maintenance time for the LINAC. The NRO experiments will use gold and tantalum beams from the EBIS. We expect to begin the Spring NSRL runs in March with one week of NRO experiments followed by NASA experiments through June.

NOTE FROM ACCELERATOR R&D DIVISION: Ilan Ben-Zvi



This month, efforts at the ATF were built around delivering our strategic plan of the ATF major upgrade to two review committees (Laser Advisory Panel and DOE User Facility Review Panel), and laser and radiation interlock recertification, while continuing beam time service to a user experiment – UCLA's Plasma Wakefield Acceleration in the Quasi-Nonlinear Regime. The experiment progressed with demonstration of the beam's transverse spot-size of 6 μm . Beam is delivered into a plasma discharge capillary. The beam-line's high-vacuum conditions upstream from the plasma source are maintained with a newly installed differential pumping. The next two weeks will see continuation of this experiment, which will look to observe lensing, and electron acceleration by plasma wakefield followed by characterization of expected nonlinear effects (bubble formation via plasma blowout by a compact electron bunch).

The ERL gun with the copper cathode has reached 1.8 MV in pulsed mode with 18% duty cycle. Next step is to deposit a multi-alkali layer on copper and try to generate first beam.

The 56 MHz SRF cavity string is being assembled in a class 100 clean room, building 905. All components with the exception of HOM couplers are in house. HOM couplers are expected to be delivered by the end of November.

LEReC: In collaboration with ANL, we continue work on design optimization of the 84.5 MHz QWR cavities. RF design is almost complete, we have started ANSYS simulations.

The crab cavity project for LHC upgrade is now an active international collaboration. As the final version of the cavity has been released, support from SLAC, Lancaster University, and CERN provide us with very detailed RF analysis with parallel computing, thermal analysis, and mechanical design. The work now is focused on the dressed cavity components, such as the couplers, tuner, and helium vessel. The proof of principle cavity will be cold tested again in early November.

Installation of the equipment for the coherent electron cooling is continuing. The 112 MHz gun and 500 MHz bunching cavities were put in place. The phase shifter for the 500 MHz system is also installed. Quiet helium source for the gun was delivered and installed into the IP2 vault. AES is preparing 704 MHz accelerating cavity for the vertical test. Budker INP is continuing to work on the helical wiggler.

NOTE FROM OPERATIONS: Paul Sampson



Shutdown '13 continues with major works progressing in RHIC and elsewhere. NSRL run 13C will continue through the 22nd of this month, using Ions provided from EBIS and protons from the Tandem Van de Graaff. Users from NRO are scheduled for the week of November 18th.

Progress continues on the many shutdown projects at RHIC and throughout the complex. The e-lens installation at IR 10 has completed several milestones, including cold solenoid field mapping for both blue and yellow. At present components are being moved their nominal positions in the ring while work on and testing of outside systems continues.

Other major efforts are being focused on preparation for the 56 MHz SRF cavity installation, ERL, new installation and upgrades to Stochastic Cooling system, preparation for CeC in IR 2 and installation of new RHIC transverse dampers. Maintenance, repair and upgrades to other major systems also continue.

Tree trimming and grounds work continues with major several objectives completed including clearance of trees obstructing the Stochastic Cooling transmission path. RHIC Air Conditioning upgrade and replacement continues. All systems should be in good repair prior to the beginning of RHIC run 14.

The Booster continues to deliver beams to the NSRL experiments without major disruption. Setup for the Au bunch merge and synchronization with the AGS RF utilizing the new low-level RF system is ongoing and progressing well. User experiments continue to run on schedule. Other work in the pre injectors includes installation of the Laser Ion source, OPPIS upgrades, HEBT vacuum, work on the Laser Profile Monitor and LINAC maintenance.

In the AGS, design for modifications to the D5 Horizontal eIPM and fabrication of the new D15 eIPM is also moving forward though installation may not take place until a Maintenance Day during the run. Other work in the AGS includes A20 snake Cryogenic repair/upgrade and installation of new targets in the C15 polarimeter.

The installation of the new Access Controls System for LINAC is nearly complete. Commissioning and testing is underway and is expected to be certified for use before the BLIP run in mid December.

Other CAD area infrastructure repairs, including electrical distribution maintenance and upgrades, also are continuing. The CAD CATV system display includes daily updates including testing, power disruptions and outages as well as important dates. This information can also be seen on the web at [RHIC Broadcast](#).

To view a list of the approved work for maintenance days or the shutdown, go the [Job Request System](#) and select the appropriate date. This link is behind the firewall and requires privileges to view.

For schedule updates see: [This Week, which can be viewed by all](#).

ARRIVALS: Welcome!

Tyler Pontieri - Student Assistant - Joined our dept. Oct. 28 , 2013. He is working with Al Pendzick in the Facilities & Experimental Support Group.

Stephen Brooks - Joined our dept. Oct. 23, 2013. He is working with Dejan Trbojevic in the Accelerator R&D Division.

James Ditta - Joined our Dept. Nov. 12, 2013. He is working with Mike Mapes in the Vacuum Systems Group.

Kenneth Decker - Will join our Dept. Nov. 18, 2013. He is working with Mike Mapes in the Vacuum Systems Group.

DEPARTURES: Farewell, you will surely be missed..

Susan Kennell-Helston - (Controls Systems) - last day was Friday, November 22, 2013 - Retiring

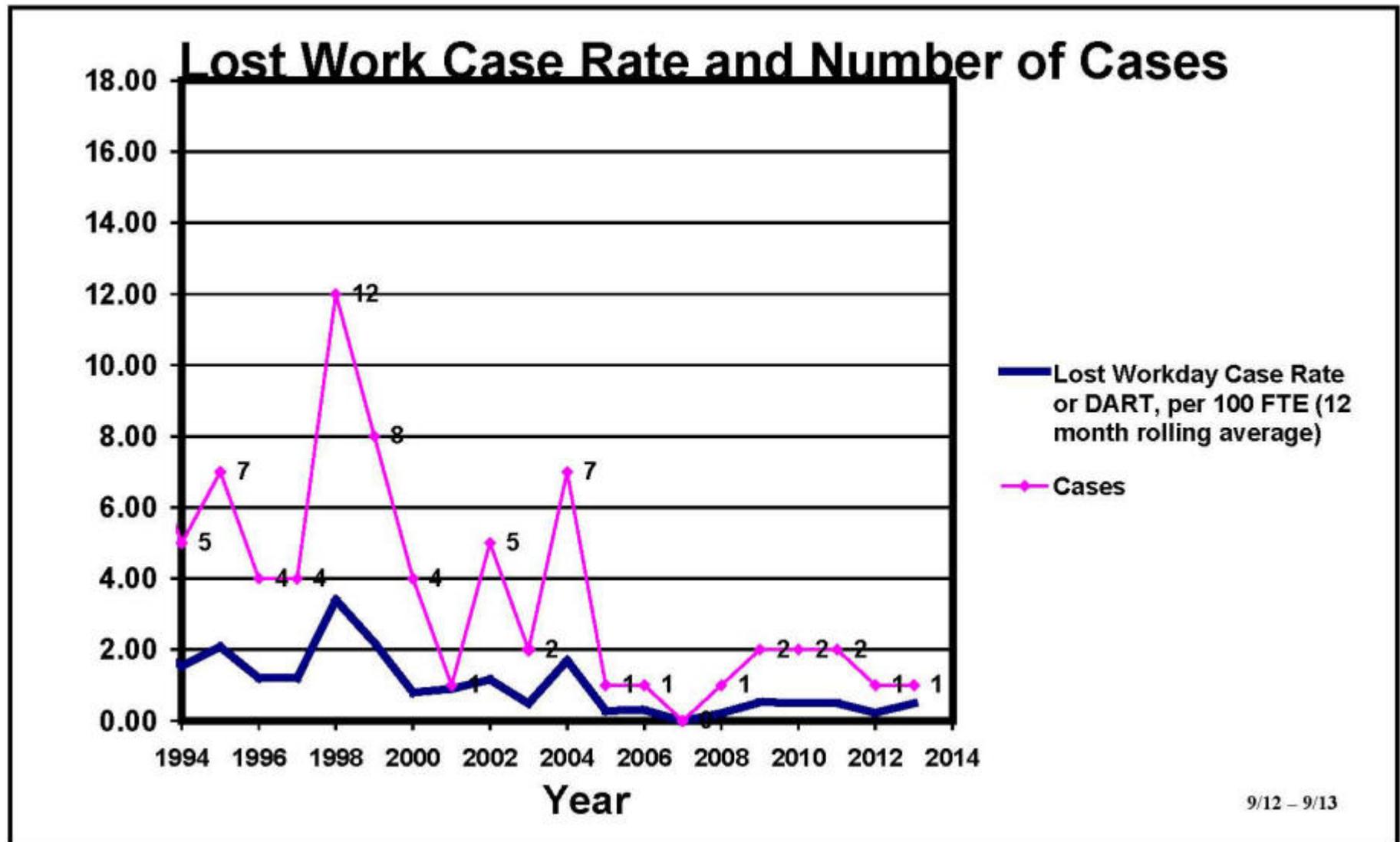
Guest Notices:

Malek Haj Tahar - Guest Technical Collaborator - Returned Oct. 15, 2013 and will work with Francois Meot in the Accelerator Physics Group until August 31, 2014.

Marta Rovituso - NSRL Guest - Leaving Nov. 15.

Robert Mertzig - Preinjector Systems - Leaving Nov. 17.

Andrey Shornikov - Preinjector Systems - Leaving Nov. 17.



C-AD Occupational Injury Statistics

For Year 2012 For Year* 2013

First Aid Cases	5	3
Recordable Cases	3	3
Lost Work Cases	0	1

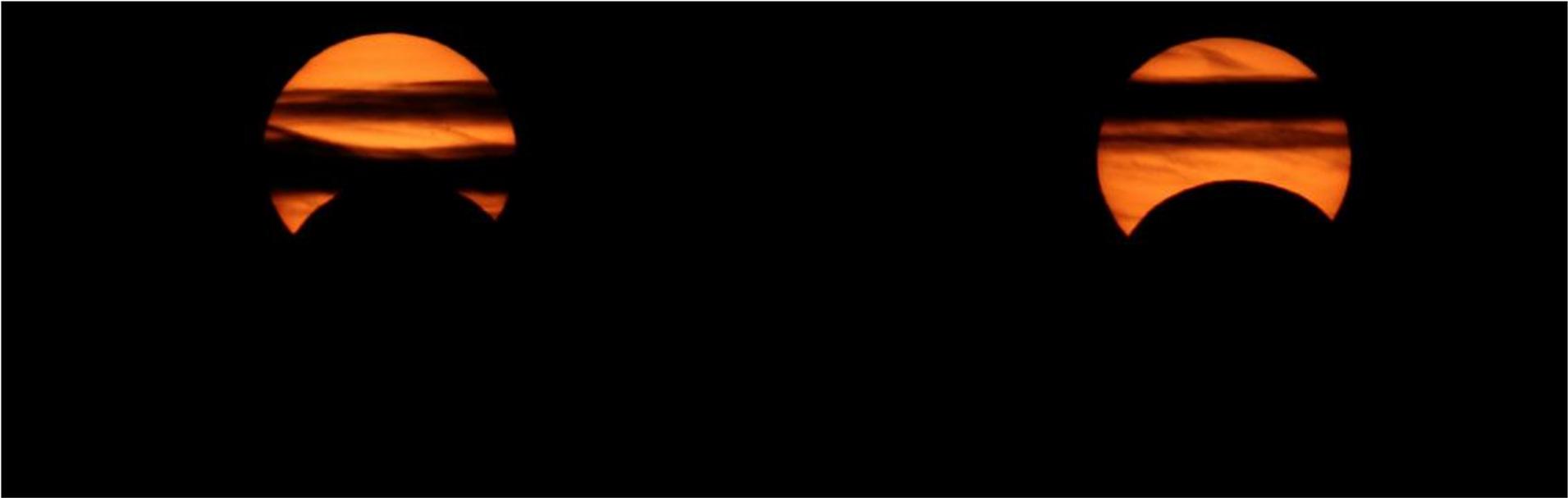
* Calendar Year through 10/13

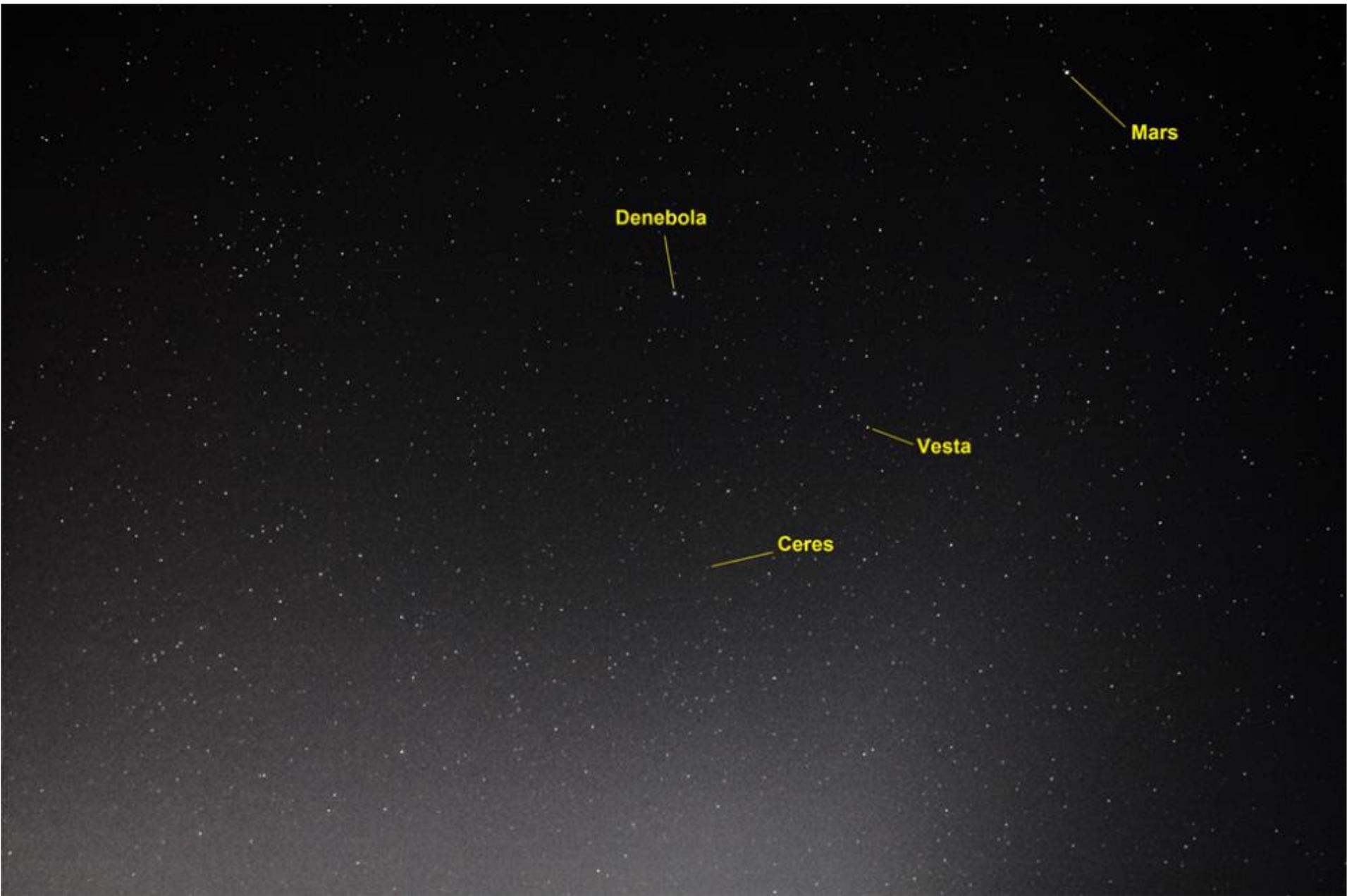
PHOTOS BY: STEVE BELLAVIA

Steve was out Sunday Morning, Nov. 3rd and was able to get some photos of the Partial Solar Eclipse.

"I thought the clouds were going to prevent seeing this rare event, but they parted just enough for a glimpse, down at Smith Point Park. I got there much earlier and also got to see Comet ISON and Comet Encke (But they did not come out in the photograph - just Mars, and asteroids Ceres and Vesta came out, though the comets were nearby)."







Denebola

Mars

Vesta

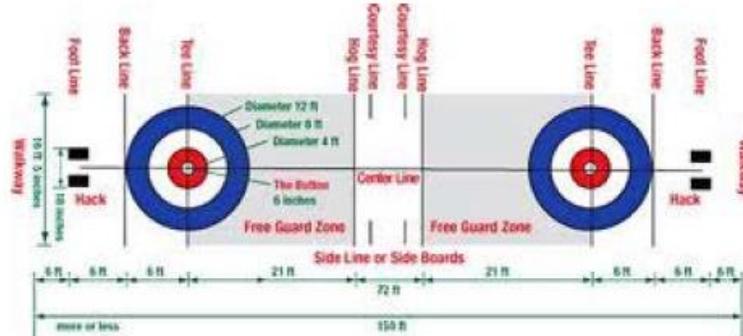
Ceres

Long Island Curling Club

Established in 2008 to promote the sport of curling on Long Island

<http://licurling.com/>

Most people have become familiar with curling the last few years when it has been televised during the Olympics. <http://en.wikipedia.org/wiki/Curling>. Curling is an ancient Scottish sport that involves sliding 40 pound granite stones on ice to a target 150 feet away.



The Long Island Curling Club plays at the Newbridge Arena in Bellmore. For the past two years they have played from April to August every Friday night. This year they are also having a winter league that will play every second Saturday night from November to April. The reason for the article in Newsday (<http://long-island.newsday.com/recreation/sports-fitness/the-sport-of-curling-sweeps-li-1.6239959>) was to promote the winter league and to encourage people to come out for a "Learn to Curl" session in November where people can sign up and learn how to curl and then possibly join the new league. There will also be another "Learn to Curl" session just after the Olympics this spring and they are expecting several hundred people to show up and try curling!

In the US it is relatively unknown but gaining support. Because of the Olympics, the number of curlers in the US has increased by ~20% over the last few years to 15,000 people. The number of curling clubs has also increased mainly on arena ice like on Long Island.

Dannie Steski's Connection to Curling:

Back in his hometown of Winnipeg, Manitoba, Canada curling is a very popular sport with approximately 20 dedicated curling clubs in the city, over 1 million people participating, around 10,000 spectators for important matches and maybe 2 million more watching on TV. These club facilities only use the ice for curling (no skating or hockey).

Dannie started curling when he was **9 years old**. His family was very big into curling with his grandfather, father and all his uncles participating. Many of his cousin's curl and now their children are also starting to play.

Dannie has been fortunate to find places where he could curl throughout his life. After he left Canada, he worked for 4 years in England and curled just over the border in Wales. He had the good fortune to represent Wales in the 1992 European Championship just after he moved to Long Island. Since moving to the US he has played in 5 US championships and was once on a team that was ranked as the **9th best in the US**. Dannie has also played in many local tournaments, most recently last weekend where are team finished first in a tournament in Connecticut. **In an average year Dannie will play in 6-8 tournaments in the US and Canada.**