

JULY '15
ISSUE

PARTICLE POST

COLLIDER-ACCELERATOR DEPARTMENT

Contact: [C. Hoffman](#)

A WORD FROM
THE:

PREVIOUS ISSUES

June 2015

GO

Administration

Accelerator Div.

ES&F Div.

Acc. R&D Div.

Operations

Arrivals/Departures

Safety Stats

[{HOME PAGE}](#) | [BNL WEBSITE](#) | [C-AD WEBSITE](#) | [ES&F WEBSITE](#) | [BERA](#) | [BNL CLASSIFIED ADS](#) | [INSIDE RHIC](#)

Quote of the Month: "The origin of life is one of the great outstanding mysteries of science." - Paul Davies

A NOTE FROM THE EDITOR: I will be handing the Particle Post over to Alissa Lamberti starting Next Month. Thank you everyone for the help, contributions and ideas that made this newsletter so successful!

NOTE FROM OUR CHAIR: Thomas Roser



Last month we ended another highly successful RHIC run and congratulations go to everybody for this great achievement.

This year's RHIC operations budget was essentially flat and even with using up all our reserves funding is very tight this fiscal year. Under these budget constraints we need to limit all RHIC operations material and travel expenditures to the absolutely necessary level that supports next year's RHIC run and keeps our RHIC upgrade projects and eRHIC R&D efforts on track. In addition, you can also help by minimizing overtime and scheduling as many of your vacation days as possible before the end of the fiscal year.

VIEW [CONFERENCE PROJECTIONS FOR 2015: DUE ASAP](#) -

CONFERENCES SHOULD BE PROJECTED THROUGH DECEMBER 2015

DID YOU KNOW??

Check out who received an employee Service Award this year! Collider-Accelerator Dept. employees who received a [Service Award](#).

Check out who received an employee [Spotlight Award](#) this year!
Congratulations goes out to the Amateur Radio members who passed their last test - Bill Eisele, Naomi Baer & Francois Meot Welcome to Real HAM Radio!

EVENTS/SEMINARS...



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

July 9 - (BNL Fire House | 11:30am) Adopt-a-Platoon Car Wash



Steve Bellevia captured a few Jupiter-Venus Conjunction photos while at the LSST Review in CA, June 30th.



Fundraiser

July 10 - (Bldg 911B - LCR | 11am) C-AD Accelerator Physics Seminar

July 21 - (Bldg 510 - LSR | 3:30pm) Sambamurti Lecture "Seeking the Origin of Asymmetry" Presented by Xin Qian, BNL

July 23 - (Bldg 510 - SSR | 3pm) High Energy Physics Seminar " Probing Charm-Yukawa at LHC, Status and Prospects" Presented by Kohsaku Tobioka, Weizmann Institute/Tel Aviv U.

July 30, 31 & August 1 - (Berkner - Rm B | 8am) Colloquium "Atmospheric Chemistry Colloquium for Emerging Senior Scientist (ACCESS XII)"

August 13 - (Berkner - Rm B | 12pm) Social Security Maximization Planning "Foundation for Personal Financial Education"

Do you have to give a talk?

Public Speaking Techniques:

Verbal & Non-verbal

Presented by:

Theodore Sampieri Ext: 4894

12:00 – 1:00 Fridays

CAD Building 911

Large Conference Room: 2nd Floor

IN OTHER NEWS...

Magnet hyperthermia, an auxiliary tool in cancer treatments-

Hyperthermia has been used for centuries to combat tumors and reduce their effects. New research aims to use a different system (magnetic nanoparticles) to increase body temperature.. [Continue reading](#)

Big PanDA and Titan merge to tackle torrent of LHC's full-energy collision data- With the successful restart of the Large Hadron Collider, now operating at nearly twice its former collision energy, comes an enormous increase in the volume of data physicists must sift through to search for new discoveries. Fortunately, a remarkable data-management tool developed by physicists is evolving to meet the big-data challenge. [.read about it.](#)

3 Keys to USA's incredible 5-2 World Cup victory over Japan - For the first time since 1999, the U.S. doesn't have to hear about comparisons to it's elders, pressure to win or how it came close four years ago. [Read about it.](#)

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Acc. R&D Div.

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▶ Arrivals/Departures

 Safety Stats

[{HOME PAGE}](#) | [BNL WEBSITE](#) | [C-AD WEBSITE](#) | [ES&F WEBSITE](#) | [BERA](#) | [BNL CLASSIFIED ADS](#) | [INSIDE RHIC](#)

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NOTE FROM OUR ADMINISTRATION: S. LaMontagne



No input at this time.

NOTE FROM OUR ACCELERATOR DIVISION: Wolfram Fischer



While BLIP is still running until the end of the month the summer shutdown is under way for the other machines. In RHIC we are preparing for the next run for Au+Au at 100 GeV, and possibly for Au+p or d+Au. Asymmetric operation will require a better protection of the detectors against the effects of particle loss after an abort kicker pre-fire. This year's RHIC Retreat will take place 27-28 July 2015 at the Brookhaven Center.

The catalog of all Technical Notes is <http://www.rhichome.bnl.gov/AGS/InternalReports.html>, and it is linked from both the Department and Accelerator Division home pages.

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[Administration](#)

[Accelerator Div.](#)

[ES&F Div.](#)

[Acc. R&D Div.](#)

[Operations](#)

[Arrivals/Departures](#)

[Safety Stats](#)

[{HOME PAGE}](#) | [BNL WEBSITE](#) | [C-AD WEBSITE](#) | [ES&F WEBSITE](#) | [BERA](#) | [BNL CLASSIFIED ADS](#) | [INSIDE RHIC](#)

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NOTE FROM OUR EXPERIMENTAL SUPPORT & FACILITIES DIVISION: Phil Pile



RHIC Run15 ended on schedule on 22 June. Overall this run was very successful. The 10.9 week 100x100 GeV pp polarized proton run in fact delivered over 20% more luminosity than the other five 100x100 GeV runs (41.9 weeks) combined. The average polarization (55%) for Run15 was somewhat lower than in Run12 (59%), however the increased luminosity more than made up for the difference. The luminosity increase was made possible by the successful commissioning and operation of the new eLens system in RHIC together with a record (for pp) ~65% of calendar time at store. The pp run was followed by a 5 week 100x100 GeV protons on gold physics run, a first for RHIC and ending with a 13 day 100x100 GeV protons on aluminum physics run, another first for RHIC. Delivered luminosity for the first two runs (pp and pAu) tracked at or near the maximum projected trajectories and tracked well above the maximum for the last run (pAl). The experiments, for the most part, were able to take full advantage of the great RHIC performance. Of note on the negative side for the experiments was damage to the PHENIX MPC detector system by an abort kicker misfire during the pAu run and the loss of one of the STAR magnet transformers late in the pAl run. The experiments are now making preparations for the 2016 run which will focus on a 10 week physics 100x100 GeV gold-gold run followed by shorter runs to be determined. The schedule for Run16 is not yet set but will likely follow approximately the same time sequence as Run15.

Linac operation in support of BLIP will continue through July in support of strontium-82 production and R&D. Strontium production continues to track above all previous years so at this point we project another record year for strontium production, an in-demand radioisotope used in the manufacture of rubidium-82 generators for PET scans of the heart. The second of two 10 day irradiations of thorium targets was completed in June and the irradiated targets were shipped to ORNL for processing in early July. BNL is part of a three lab consortium (with ORNL and LANL) collaborating on advancing the production of actinium-225. The Target Processing Laboratory will continue processing through mid-August. Plans for next year call for installation and commissioning of the new beam raster system in late December followed by strontium production using the raster system beginning in early January. With the raster fully commissioned and operational BLIP will be able to accept the full LINAC beam current.

The NSRL run 15B that began on 16 May ended at the end of June. A project to raise the maximum beam energy to 1.5 GeV/n is set for installation during the 2015 shutdown period. This project will allow for higher energy heavy ion beams to better simulate the galactic cosmic ray spectra that will be encountered by future deep space explorers. The next operation of the Booster in support of NSRL will begin around the middle of October with the exact schedule to be determined.

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[Acc. R&D Div.](#)

[Operations](#)

[Arrivals/Departures](#)

[Safety Stats](#)

[{HOME PAGE}](#) | [BNL WEBSITE](#) | [C-AD WEBSITE](#) | [ES&F WEBSITE](#) | [BERA](#) | [BNL CLASSIFIED ADS](#) | [INSIDE RHIC](#)

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Link to: [ATF Newsletter](#)

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



The R&D ERL continues commissioning. The performance of the SRF gun continues to improve, notably the dark current (beam without photoemission) has been rapidly declining.

The beam charge record in a superconducting 704 MHz RF gun of the ERL gun has been broken by the CeC superconducting 112 MHz gun, which achieved 3 nC per bunch at a bunch repetition rate of 5 KHz.

The 56 MHz RHIC cavity was "helium processed", a method in which the losses due to field emission current are reduced through the introduction of a bit of helium gas into the cavity. The cavity reached its design voltage of 2 MV in continuous operation, and 1.75 MV in pulsed operation. It is expected that further helium conditioning will lead to even greater performance.

The eRHIC R&D working groups addressing the high-priority eRHIC subjects continue their work towards a detailed bottoms-up cost estimates. The R&D plans will be reviewed in the week of August 10.

June has been a very productive month in the construction of ATF-II, and anyone visiting building 912 can witness the tremendous progress.

NOTE FROM OPERATIONS: Paul Sampson



Shutdown 2015 started last month following the successful completion of Run 2015 with p-A1 on June 23. NSRL Run 15b ended June 30 and the BLIP run is scheduled to end July 31st.

With the end of tests for CeC and 4 o'clock RF, all areas of RHIC are presently opened on Restricted Access. The PHENIX Shield wall is down as are several other shield blocks at RHIC. Shutdown work has begun in many areas, including 2 o'clock (CeC and LEReC) and the experiments. Maintenance items are currently being addressed while some other work is awaiting information regarding run 16 (DX and 9MHz moves).

LINAC continues to run well for BLIP. A final maintenance period for LINC will take place behind target changes at BLIP on the 13th of July. Preparation for the installation of the raster this fall continues outside of the ring until later in the shutdown when the BLIP tunnel with is opened.

On July 6th the Booster was opened on Restricted Access and work for the 1.5GeV upgrade for NSRL began last week in the beam line and will start in the ring shortly.

. AGS shutdown work is ongoing.

The "[RHIC Broadcast](#)" link displays the latest schedules for testing, power disruptions, outages and daily schedules.

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

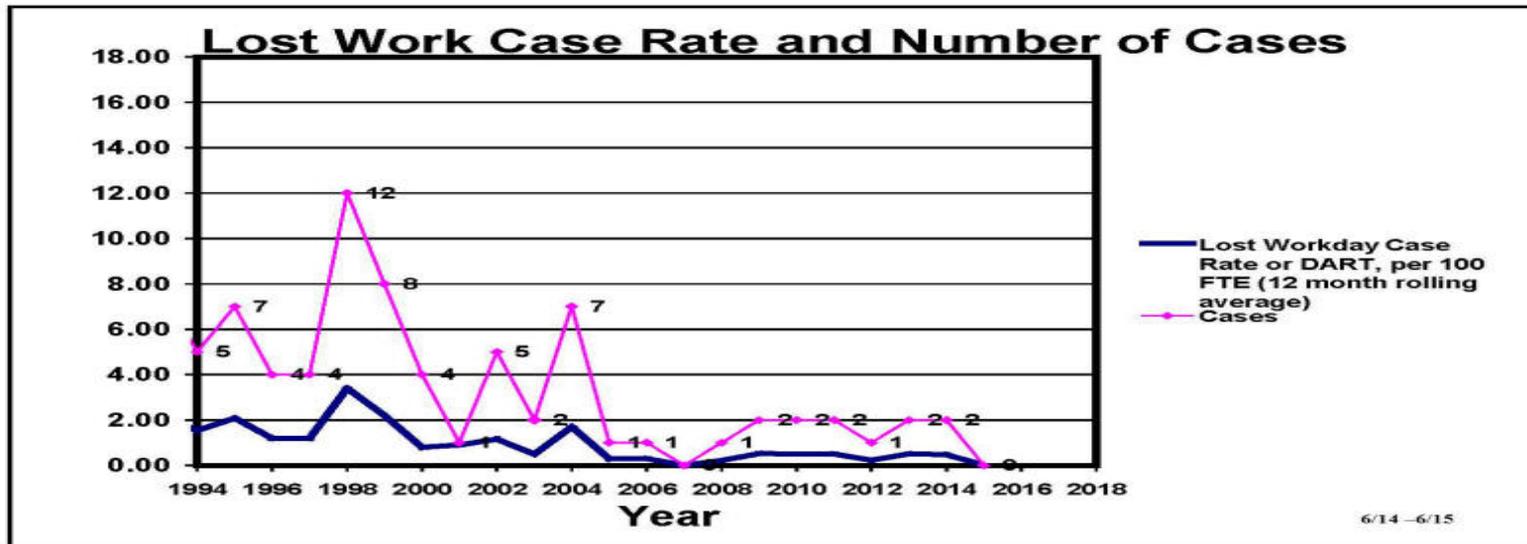
For weekly schedule updates see: [This Week, which can be viewed by all.](#)

ARRIVALS: Welcome!

Anton Fischer - Working with J. Tuozzolo as a High School Trainee.
Colleen Michael - Working with S. LaMontagne as Administrative Support for the NPP Business Office.

DEPARTURES: Farewell, you will surely be missed..

SAFETY STATS: Peter Cernigliaro



C-AD Occupational Injury Statistics

For Year 2014 For Year* 2015

First Aid Cases	8	3
Recordable Cases	3	1
Lost Work Cases	1	0

* Calendar Year through 6/15