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DEPARTMENT OF PHYSICS AND ASTRONOMY

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Think KU—Think Physics

We were recently given some software to test out—software that looks at aggregate citation rates over academic research fields. Some interesting patterns emerged.

Among all the academic fields at KU tracked by the software...

1. Publications from KU in “Physics, Multidisciplinary” is the third most frequently cited academic area by others.
2. If you look at the number of citations divided by the number expected (defined by the national rate for the same field), Physics comes in second at KU.
3. If you look at journals where KU authors are cited, the number two journal in any field where that most frequently happens is *Physical Review D*.

...Note that these results cannot be explained as a multi-author publication bias, since they count papers citing papers...

OUT and ABOUT

The LHC is starting back up again. During the weekend of November 7 and 8 the LHC sent beam 1/2 way around the ring to about 150m from the CMS experiment <http://cms.web.cern.ch/cms/index.html>. The beam was then dumped into a collimator to create a splash of muons that could be detected by CMS. These beam splash events are very useful to prepare CMS to take data from real collisions in a few weeks. The KU nuclear group, which built the CMS Zero Degree Calorimeter, <https://twiki.cern.ch/twiki/bin/view/CMS/ZDCWikiHome>, were very excited to see this first data. Dr. Oleg Grachov and graduate student Jeff Wood are busy analyzing the data. The High Energy CMS group which works on the tracking systems is also excited that data taking is about to commence even though the trackers were purposely off at the time of the beam splash events.

Next January the International Committee on Future Accelerators will hold their School on Instrumentation in Elementary Particle Physics at San Carlos de Bariloche in Argentina. Three of the 11 US students whose trips are sponsored by the NSF are from KU. Jenny Sibille, Victoria Zhukova and Jeff Wood will get a chance to learn about the very latest developments in instrumentation and also to discuss their work on the CMS experiment.

Prof. Steve Hawley gave a public lecture on Sept. 9 as part of the Linda Hall Library Space Exploration Lecture Series. Other speakers in the series included Scott Carpenter and Jack Schmitt. He also was a featured speaker at a Kansas Cosmosphere event honoring the 25th anniversary of the first flight of the Space Shuttle Discovery. Prof. Hawley gave the keynote address at the Kansas Honors Program in Wichita on Nov. 9 and spoke at the Lawrence Rotary Club on Oct. 26. Prof. Hawley and Prof. Barbara Anthony-Twarog made presentations to 600 high school juniors and seniors as part of Jack Kilby Science Day in Great Bend on October 20. Prof. Hawley gave an International Year of Astronomy presentation to 300 middle and high school students at Perry-Lecompton HS on Nov. 6.

Prof. Steve Hawley gave an invited presentation at the 10th anniversary Chandra X-ray Observatory science symposium in Boston on Sept. 22.

Prof. Hawley was interviewed by the Lawrence Journal-World on NASA's announcement of the discovery of water on the Moon. The interview was picked up by some other newspapers regionally.

Prof. Melott spoke at colloquia on "Long-term cycles in Biodiversity" and did some recruiting of graduate students in the physics department at the *University of Missouri* (Sept 28) and a multi-departmental event at *Southern Nazarene University* in Oklahoma (October 22).

An abstract entitled "Cometary airbursts and atmospheric chemistry: Tunguska and a candidate Younger Dryas event" submitted by Adrian Melott for the annual meeting of the *American Geophysical Society* was picked up by the British news weekly *New Scientist*, who ran a story on it November 19. The study will be published in the December issue of *Geology*, with co-authors Brian Thomas (Washburn University Physics; 2005 KU Ph.D.); Gisela Dreschhoff (Adjunct Professor of Physics and Astronomy) and Carey Johnson (Professor of Chemistry).

On October 23 and 24 Mihailo Backovic and John Ralston gave talks at the Midwest Theory Get-Together held at Argonne National Lab. Mihailo talked about "Dark Matter Threshold Effects". John talked about "Quantum Mechanics without Planck's Constant".

On September 24th Gregory Rudnick was on the Walt Bodine radio show to talk for an hour about the recent refurbishment of the Hubble Space Telescope. He was joined by UMKC assistant professor Daniel McIntosh. This is the start of what will hopefully become a regular astronomy segment on the Walt Bodine Show.

SPS gave some demonstrations of the marvels of physics to grade school students in Eudora on November 17th. Ed Fensholt and Maria Isabel Frias went with Prof. Murray to Santa Maria High School in Eudora to show students how light, momentum and pressure work in our world. SPS hopes to go to other grade schools soon.

On Sunday 22nd from 1-4pm SPS will be hosting a "Physics Wonder Room" in collaboration with the "Festival of Chemistry". In previous years this event has attracted lots of young scientists.

Undergraduate Subhankar Halder has been selected for the University Scholars Program. Only 20 outstanding sophomores win award each year. Subhankar is doing research in the nuclear group with Prof Michael Murray. He work is on applying some of Richard Feynman's ideas to relativistic heavy ion collisions.

RECENT PUBLICATIONS

Testing the link between terrestrial climate change and Galactic spiral arm transit, by A.C. Overholt, A.L. Melott, and M.K. Pohl was published in *Astrophysical Journal Letters* 705, L101-L103 (2009).

Signals of Statistical Anisotropy in WMAP Foreground-Cleaned Maps, by P. K. Samal, R. Saha, P. Jain (IIT Kanpur) and John P. Ralston was published in *Mon. Not. Roy. Astron. Soc.* 396, 511 (2009).

DEPARTMENT NEWSLETTER--CALL FOR ITEMS: Please send your items to Danny Marfatia (marfatia@ku.edu). It's a lot easier to use them if you make them editor-ready: Group them according to the kind of item. Use plain text or Word. Don't number them. Don't say "I visited the Sheboygan Zoo." Use your name (third person). Etc....

Department of Physics and Astronomy
University of Kansas
1251 Wescoe Dr. # 1082
Lawrence, KS 66045-7582