

ISPP REMINDER

March, 2012

OUR NEXT MEETING...

...is at **Lake Forest College**
Tuesday
April 17, 2012
6:30 – 9:00 PM

Scroll down for a map and directions..

FUTURE MEETINGS

April 28	(Saturday)	CSAAPT, Thornton H. S.	Harvey
May 7	(Monday)	Niles West H. S.	Martha Lietz
May 15	(Tuesday)	Physics Day @ Great America	Krystal Bern (kbern@sftp.com) or Nate Unterman
June 5	(Tuesday)	MSI (& annual Host Meeting)	Ruth Goehmann

AT OUR LAST MEETING...

...we were welcomed to Loyola University by **Gordon Ramsey**, who began the meeting with a phenomenon. He brought out a clarinet and a saxophone and a vernier sound program on the computer so we could graph the frequencies and their intensities. He began with the clarinet, which is a tube closed at the reed and open at the end, so that we should get odd harmonics. He played a note at about 500 Hz and indeed got a strong harmonic at 1500 Hz.

When Gordon tried the saxophone it had strong harmonics at every multiple of the fundamental. Different people proposed reasons for this including the shape of the horn and the fact that it is made of metal.

The theme of the next annual meeting in New Orleans is musical acoustics so this demo was a nice appetizer.

Tom Senior (Loyola University) announced that it's a good time for planet gazing. March 25 Jupiter, Venus, and the moon will be close together. He also showed a video called "time lapse earth at night from space" which you can easily find by googling. The aurora and lightning strikes were impressive.

Tom also made a nice A.C. electromagnet out of some steel coat hangers and a PSSC coil. It shot an aluminum ring about a meter in the air and lit a flashlight bulb attached to a small coil.

Tom also brought a couple coils in a "T" balanced on a pencil-like stick. When he pushed a magnet into one of the coils the "T" rotated. This is a fast demonstration that could provoke a nice discussion in a physics class.

Pete Insley (Columbia College Chicago) brought some Salol and poured a small pile (3mm diameter) onto a microscope slide. After he reminded everyone of the old PSSC curriculum that spent the year building a model of the atom, Pete melted the Salol with a match and waited for it to recrystallize. Nothing happened so we continued the meeting, but after about 10 or 15 minutes later you could see crystals forming in the liquid. They formed regular

parallelograms and Pete said this demo was early in the course to show the existence of atoms. Regular crystals could not be spontaneously formed by irregular objects.

Pete also read an email he recently received from a student from 1968. She said her lasting impression of physics was the lesson that as you get more facts you have to be willing to change your model. She said she used this more than once in her life.

Joe Kozminski (Lewis University) has been cleaning out his storage room and brought some vintage demonstration apparatuses. He had some induction coils, some motors, and a thermoelectric magnet. We all had a nice time identifying them and describing how they were used.

Rich DeCoster (Niles West High School) brought some plastic garden globes that he cut in half to make spherical mirrors. He placed a sphere on a large piece of paper and a marker in front of it. Then he drew rays from the front of the marker and the back of the marker to the sphere and off at equal angles. When he replaced the marker you could see the lines in the globe meet at the image.

Rich also mentioned that this is the 100th anniversary of the discovery of Cepheid variable's use to measure stellar distances.

Mike Rogan (Rolling Meadows High School) received a new teacher's bag.

Karlene Joseph (Lane Tech High School) bought out a colored map of the U.S. and asked what the colors represent. We made a few guesses and after a while she told us they were frequency of lightning strikes. The point was that it's hard to know what is represented by a graph if you don't label it.

Gordon Ramsey had a musical giveaway for us to end the meeting. We each received 4 wind chimes made of copper and hung by nylon thread from a wooden slat. Gordon also had a paper giving the dimensions of the chimes and an equation for the frequency of each length. On the back were Gordon's suggestions for making your own set using ½ inch copper pipe.

It was a nice meeting. We met Loyola's physic majors who spent hours before the meeting making wind chimes for us all. Thanks!

Submitted by Pete Insley

Directions to Lake Forest College

From Chicago — Take I-94 (Edens Expressway) north toward Waukegan. When I-94 splits off toward Milwaukee, stay on the Edens, which becomes U.S. Route 41. Exit at Deerpath Road, turn right (east) onto Deerpath and continue through the town of Lake Forest and toward the College.

From points North — Take I-94 south from Milwaukee. Just south of the Wisconsin-Illinois line, stay left and follow U.S. Route 41. Exit at Deerpath Road, turn left (east) onto Deerpath, and continue through the town of Lake Forest and toward the College.

From points West & Southwest (including O'Hare Airport) — Take I-294 (Tri-State Tollway), which becomes I-94, north to Illinois 60 (Town Line Road). Exit and turn right (east) on Route 60. Continue east to Route 43 (Waukegan Road), turn left (north) for 1/2 mile to Deerpath Road. Turn right (east) onto Deerpath and continue through the town of Lake Forest and toward the College.

