This is the first of a biweekly newsletter established in order that students can be better informed regarding activities and developments in the Physics Department. This letter will be used by the chairman, academic advisors, faculty, staff, and students to relay information deemed important to students. Faculty will be encouraged to list employment opportunities for graduates and undergraduates in the newsletter. Students seeking jobs may use the newsletter to list qualifications and type of position preferred.

Periodically we will ask faculty to discuss major developments in their area (e.g., Monopoles - by Gleeson in this issue).

Every student majoring in physics will be assigned a mail box in the hall on the fifth level. The boxes should be checked regularly.

CHAIRMAN'S COMMENTS
J. A. Cratty RLM 5.204

First, I wish to take this opportunity to welcome to the department all of our new physics majors, both freshmen and transfer students. I also want to welcome back to the department for another year the students continuing in our program.

I think we have an excellent set of advisors to work with our undergraduate students. Professors Oakes, Fromhold, Mullatt and Gleeson have a serious interest in and are very knowledgeable concerning the program in the department and I'm sure you have already found them of considerable assistance. You may find that when a problem arises that they often times will be able to make a simple suggestion to help you solve it. I really appreciate the job they are doing and hope you do also and will let them know this.

Should there arise any occasions where you feel that you need to talk to the chairman about something, please

Continued on page 3
The deadline for a number of important scholarships are fast approaching. They are:

**Marshall Scholarships**  
(Study in the United Kingdom)  
Oct. 1

**Rhodes Scholarships**  
(Study at Oxford)  
Oct. 31

**Churchill Scholarships**  
(Cambridge University)  
Nov. 7

**Danforth Fellowships**  
Nov. 1

Most of these require that you take the October Graduate Record Exam.

Applications for all awards except the Danforth Fellowships are available in the General and Comparative Studies Office in the West Mall Building 101A. Danforth Fellowship applications may be picked up in the U.T. Provost's Office, Main Building 201. One of our graduates received a Churchill Scholarship last year and we have had a Rhodes Scholar a few years back. If you would like to discuss your chances, drop by.

Seniors considering Graduate School for next year should see the Senior Advisor during September. Important dates for these students are:

- **Sept. 22** Application Deadline for Graduate Record Exam (GRE)
- **Oct. 18** Graduate Record Exam (Austin)
- **Nov. 1** Deadline for Application
- **Nov. 15** Special Graduate Record Exam ($5.00 extra fee) Austin
- **Nov. 12** Deadline for Application
- **Dec. 13** GRE (St. Ed's or San Marcos)
- **Dec. 9** Deadline for Application
- **Jan. 10** GRE (Austin)

Applications are available at the Measurement and Evaluation Center, 2626 Wich-Ita Street.

I would like to take this opportunity to welcome you back for another academic year and hope that you have any problem or questions concerning your academic program that you will not hesitate to come by and see me. For those of you who have transferred schools and whom I have not had the opportunity to get to know if you would just stop by. My office sometime.

To all of you that I have met and especially to those of you that I have not yet had the opportunity to meet, I would like to extend both for myself and my colleagues in the Physics Department a warm welcome to the Physics Department of the University of Texas. We are really pleased that you chose to come here to pursue your studies and hope that we will provide you with the atmosphere and assistance that will enable you to succeed in your career plans. If you have any questions on which either or or the staff can be of assistance please come by to see us. My office hours are MWF 1:00 to 2:00 and in Room RLM 9.324A. The phone number is 471-5158.

The Physics Department Chapter of the Society of Physics Students is sponsoring a "Physnik" in Eastwoods Park on September 26 at 4:00 p.m. The park is located just off campus at 26th and Harris Park. This "Physnik" is intended to serve principally as a mixer for new students and staff and you are therefore the quests of honor and all of us would like to see you there. There will be good company, games, and best of all refreshments. While there you could get to meet more of the further advanced students, investigate the possibility or interest of joining the Society for Physics Students, or gripe about things to hopefully sympathetic ears.

If you are still faced with beginning of the semester course or registration difficulties, come to see us and we may be able to help.
Continued from page 1
"Chairman's Comments"
do not hesitate to come by. My door is
figuratively, as well as actually, always
open. I hope I have during the coming
year an opportunity to meet all of you
personally and wish you the best of luck
in your studies.

"Monopoles"
axioms of Physics research is that what
is must be possible but the converse is
also often implied - what is possible
must be. Maxwell's equations in their
original form showed a lack of symmetry
if the magnetic monopole did not exist.
The addition of the monopole is not as
trivial as the direct addition of a magne-
tic charge density to the divergence of
B term in Maxwell's equations. The
analysis of Maxwell's equations in terms
of vector potentials is considerably com-
plicated by the simultaneous existence
of both types of charges. The first de-
tailed analysis of this problem and the
first real attempt to be precise about the
verifications of the existence of a monopole solution was carried out by
P. A. M. Dirac in 1931. Dirac also
pointed out the possibility that the ex-
istence of the magnetic monopole may
account for the fact that the elementary
gravity of electric charge is always
quantized in units of the charge of the
electron. The theory implied that mon-
opoles should have a magnetic charge
of 137e. This magnetic charge and the
fact that magnetic charges would ionize
at a uniform rate were the tell tale
signatures of the monopole. The figure
shows the emulsion stack with its ve-
locity discriminating Cerenkov plates and
ion density sensitive g-5 emulsion. A
summary of the analysis of this one
event is shown in the figure. The con-
clusion of the existence of the mon-
opole was welcomed by both theoreticians
and experimentalists alike. It provided
a more symmetric electromagnetic force
system and accounted for the existence
of a quantum of charge.

Recent reanalysis of the plate geometry
with different but reasonable allowances for
tolerances seem to indicate that this recent
excitement may have been premature. A con-
sistent interpretation of the plates with the
event being interpreted as a very high
energy plutonium ion or the cosmic ray
shower is now the most widely accepted view.
These plates are now being reexamed in
great detail to see if either of the competing
interpretations can be refuted.

SPS NEWS

SPS has traditionally served as the stu-
dent branch of the American Physical Society
at a national level and as such has provided
the same basic services such as "Physics
Today" and organizing activities of impor-
tance to the physics community as a whole,
but with special emphasis on the representa-
tion of both undergraduate and graduate needs.
The Sigma Pi Sigma portion of the organization
has functioned as a national honor society.
Here at Texas the functions of SPS are
somewhat more immediate in their effect on
a student's education and relation to the
department. Active membership does not
require formal dues paying. It is tacitly as-
sumed that every student is represented by
SPS and will take advantage of the services
designed to make the department an enjoyable
place at which to work. Sigma Pi Sigma has
been allowed to fade from prominence since
its actual benefit to students, for a $20 fee,
is minimal. Students who qualify for mem-
bership will be informed as to procedures for mem-
bership but will not be actively sought.

The activities of SPS are sometimes less
than visible to the average student, except
for the biannual department celebration replete
with appropriate libation and entertainment,
better known as the Physnik. In the fall 1st
year graduate students are invited as quests
of the department to meet the faculty and
other students in a more social atmosphere.
This fall's pleasure will be held on September
26 at 4:00 p.m. in Eastwoods Park across
26th St from the Law School. The object is
thorough enjoyment so come appropriately
prepared.

Continued on page 4
The other activities of SPS include representations on the department committees that determine office space needs, computer usage, library services, and the Graduate Student Studies Committee which deals with curriculum, degree requirements, T.A. teaching loads and reviews student progress and/or problems. In each of these areas student members have votes on the committees and take an active role in all decisions, so students should use these people to represent their needs and desires. On a University level SPS represents the department in the Graduate Student Council, in its supplementary efforts and liaison with the faculty and dean.

Obviously the influence of SPS is rather diverse, hopefully students will use it as their form for expounding new ideas and airing their dissatisfaction.

Paul Gleisnau, SPS President

REMEMBER THE PHYSNIK IS THIS FRIDAY SEPTEMBER 26! TICKETS ARE AVAILABLE FROM THE SPS OFFICERS AND IN THE STUDENT OFFICE, COME BY AND PICK YOUR TICKETS UP TODAY. Student tickets are $1.25 -- Student with date or spouse are $1.75 -- Faculty/Staff are $2.00 -- Faculty/Staff with date or spouse are $2.50. EVERYONE COME AND MAKE THIS A PHYSNIK TO REMEMBER! THE DATE IS SEPTEMBER 26 AT 4:00, DON'T FORGET!!!

The Physics Student Office would like to remind all students that the office is here to serve you. If you have any questions or problems on which we can help we will do our best to answer your questions or help you find the answers. Our doors are open from 8:00 - 12:00 and from 1:00 - 5:00. Please feel free to stop by every now and then just to say hello and see if there is anything new that you should know about.

The Student Office is located in RLM Rooms 5.214, 5.216, and 5.218. Most of the Undergraduate affairs are handled either in 5.214 or 5.216 by Kathleen Boyle and Jeannie Gregory. Most of the Graduate affairs will be handled by Myrna Payne in 5.218.

FAREWELL FROM KAY BAKER

I would like to welcome all the new physics majors to the Physics Department. I have been here for several years and have seen many very good students graduate from this department with a great feeling of achievement. These first college years are the most important years you will experience in the pursuit of your career. I wish each and every one of you the best of luck. Study hard -- it is worth it in the end.

To all the students I have known and worked with these past few years, I want to say how very much I am going to miss you. It has been one of my greatest experiences working with you, getting to know you, and helping you whenever I could. I think you are all working hard toward future achievements, and wish you all the best. I know you deserve that! Keep up the good work.

Ms. Myrna Payne will be taking my place and I know you will like her. Her office is RLM 5.218 and she will be working directly with the graduate students. Please drop by and introduce yourself to her so she can get to know you.

The party you all gave me was just great! I really enjoyed it and will keep my souvenirs near and dear along with my memories.

Contributions to the "PHYSICS PFUNNIES" are invited as are all contributions to the Physics Newsletter.