

Undergraduates Got the Chance to Publish Paper in International Prestigious Journal

by Eric M H Wu and Jason H K Wu, 2011 BSc (Physics) graduates.

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2011 April 25 marks a very exciting day for us in our undergraduate lives – our first scientific journal paper entitled “Exploring the Dark Accelerator Hess J1745-303 with the Fermi Large Area Telescope”, led by Professor K S Cheng, Department of Physics, HKU, and his collaborators Professor C Y Hui, Dr R H H Huang, Dr P H T Tam and Professor A K H Kong, was accepted for publication by The Astrophysical Journal of The American Astronomical Society. Being enthusiastic about pursuing a career in astronomy, we are most appreciative of such precious opportunity, making us ahead of our fellow classmates to get our feet wet in a new world. Indeed, we have taken great steps towards our postgraduate studies.

It all starts with the Fermi summer workshop held in HKU last summer. Unlike other overseas academic conferences, the convenience of location allowed undergraduates like us to grab the golden chance and have a taste of research. Professor K S Cheng, our teacher and organiser of this workshop, successfully established the Fermi Asian Network (FAN), gathering young Asian scientists who were interested in the field of gamma-ray astronomy and helped them to build collaboration with each other. We would say it was really an eye-opening experience – we attended a series of talks delivered by astronomers from other universities on their work and publications, and a tutorial session on data processing which equipped us with proper analytical skills. Then, we started to work as summer interns in the Department of Physics and embarked on a long journey of academic research. Thanks to the Department for giving us the opportunity to gain hands-on research experience and participate in a significant scientific research project – the gamma-ray astronomy research project under the supervision of Professor Cheng.



Eric is delivering a tutorial on data analysis in the second workshop.



Jason is presenting his latest findings on supernova remnants in the second workshop.

experienced collaborators of HKU and NTHU, we began to draft the journal paper. This was really a good training for both of us. We needed to circulate the paper around and ensure the accuracy of supporting data. Whenever a mistake was spotted, we would double check, consult other authors and see how we could make suitable corrections. Yes, it was a very valuable experience to us. We have never thought we could also be the authors of a prestigious journal paper like The Astrophysical Journal! Of course, without the inputs and support from other experienced authors, our dreams could not have come true.

This summer, we had got another Fermi Workshop at the National Tsing Hua University in Taiwan. Unlike the first workshop where we only sat there as audience, we had the chance to be one of the presenters on stage, putting their findings on the screen and reacting promptly to challenging questions from audience. With the skills acquired in the first workshop, we were also responsible for conducting tutorial sessions, introducing the fabulous world of gamma-ray astronomy to new-comers. Through interacting with other participants, we developed a close network with other postgraduate students in our field. Apart from academic research, we also spent one extra day exploring the city of Taipei and tried many local street-side snacks. Thanks to our new Taiwanese friends for being our guides. It was really an enriching and fruitful workshop, as well as a valuable chance for cultural exchange.

From the research experience, we realize that research work is vastly

different from undergraduate coursework. It is no way like writing essays and doing assignments – sitting down and grinding using pencil and paper – but a highly interactive world where one has to gather the most updated news, work against deadlines, and prepare yet another piece of news which might be even more astonishing to other fellows in the field.

We are very grateful to our supervisor, Professor Cheng, who provides tremendous support in strengthening our physics background. We would not thank less for the relaxing moments and fond memories with our teammates, who gave us courage to face every challenge in our work.

The journal paper on “Exploring the Dark Accelerator Hess J1745-303 with the Fermi Large Area Telescope” can be viewed at: <http://adsabs.harvard.edu/abs/2011ApJ...735..115H>

We have also published our discovery on gamma-ray emission from a young supernova remnant Kes 17 in The Astrophysical Journal Letters, which can be viewed at: <http://adsabs.harvard.edu/abs/2011arXiv1108.4084W>



Interesting discussion on data processing with a graduate student from UK.

present findings and convey ideas to others. With the guidance of Professor C Y Hui of Chungnam National University, Republic of Korea, and some other



Professor K S Cheng was leading a discussion about future collaborations during the first workshop.