

Wednesday, August 3, 2005 : Inaugural Function for the ICRC 2005

The inaugural function for the 29th International Cosmic Ray Conference was held in the Chandrasekhar Auditorium of the Inter University Centre for Astronomy and Astrophysics on Wednesday, August 3, 2005 at 10:00 am, on the campus of the University of Pune at Pune. After a warm welcome to the participants of the ICRC 2005 and the invited guests by Prof. Suresh Tonwar on behalf of the National and Local Organizing Committees, the conference participants were welcomed by Prof. M. Balakrishna Kurup, Dean of the Faculty of Natural Sciences of the Tata Institute of Fundamental Research (TIFR), Mumbai, the main host for the ICRC 2005. Prof. Ashok Kolaskar, Vice-Chancellor of the University of Pune, welcomed nearly 650 participants from various universities, national laboratories and research institutions from 42 countries around the world to the campus of the university and invited them to visit its various departments and research centres which are well-known nationally and internationally for their excellence. As the organization of the conference was utilizing many of the infrastructure facilities of the Inter University Centre for Astronomy and Astrophysics (IUCAA) and the National Centre for Radio Astrophysics (NCRA), also located on the campus of the University of Pune, the conference participants were greeted and welcomed by Prof. Naresh Dadhich, the Director of IUCAA, and Prof. R. Nityananda, the Director of NCRA. Following these welcome remarks, Prof. Peter Wenzel, Chairman of the Commission on Cosmic Rays (C4) of the International Union of Pure and Applied Physics (IUPAP), the main international sponsor of the ICRC 2005, thanked the Indian hosts for the conference, including the members of the national and local organizing committees and various government organizations and research institutions in India for the excellent arrangements made for the conference. After giving a brief history of the organization of the ICRC's since the first conference held in 1945 at Krakow, Poland, Prof. Wenzel declared the 29th ICRC open. He wished the conference participants a very stimulating and exciting time in Pune, both scientifically at the conference and socially in Pune and in India. Thanking Prof. Wenzel for his kind remarks about the arrangements made for the conference, Prof. Tonwar invited Prof. Wenzel to announce the winners of various awards, traditionally given at the inaugural function of the ICRC.

O'Ceallaigh Medal:

The O'Ceallaigh Medal was established by the estate of late Prof. Cormac O'Ceallaigh and the Dublin Institute for Advanced Studies to honour 'outstanding contributions to Cosmic Ray Physics' and is awarded by the IUPAP Commission (C4) on Cosmic Rays. The Commission wishes to use this award to recognize significant contributions to the field of cosmic ray physics over an extended career.

Prof. Wenzel announced the winner of the O'Ceallaigh Medal 2005 to be Prof. Thomas K. Gaisser of the Bartol Research Centre and requested Prof. Simon Swordy to read out the laudation for Prof. Gaisser.

Laudation for Prof. Thomas K. Gaisser for the O'Ceallaigh Medal 2005:

Since the late 1970's Tom has motivated and dominated a large fraction of the field of cosmic ray physics. His efforts and papers have attracted the attention and the interest of the high energy physics community. Some excellent scientists from this community now work on particle astrophysics projects and contribute to its success.

Tom's contributions to the understanding of the physics of Extensive Air Showers paved the way for today's analysis of this phenomenon. His role in the interpretation of the results from the cosmic ray

neutrino experiments is also very noteworthy. Gaisser's list of important publications is even wider and includes topics from particle physics to antiproton production in the interstellar medium.

Tom's book on cosmic rays is today's standard reference in papers on a variety of topics in the general field. Many new scientists in the field, young and mature, have learned about cosmic ray physics from this book.

Tom was active and contributed to the creation of *Astroparticle Physics*, a Journal devoted to our field. He also served a long time as a receiving editor.

During the past several years Tom has become a well recognized spokesman for our field in many important committees that fight for the future of our research. These include his service as chair of the Cosmic Ray Commission of IUPAP, chair of the Panel on Particle, Nuclear and Gravitational-wave Astrophysics of the Astronomy and Astrophysics Survey Committee, chair of the Organizing Committee for the 1999 International Cosmic Ray Conference, member of PANAGIC - Particle and Nuclear Astrophysics and Gravitation International Committee and quite many others. Tom was asked to make the concluding remarks for the International Workshop for Neutrino and Subterranean Science organized by the National Science Foundation in the US to discuss the future of these fields.

In summary Tom Gaisser's contributions to the field of cosmic ray physics have been really outstanding.

Prof. Wenzel presented the O'Ceallaigh Medal to Prof. Gaisser and invited him to say a few words.

Response of Prof. Thomas Gaisser for the acceptance of the O'Ceallaigh Medal

Thanks very much to the Cosmic-ray Commission for selecting me to receive the O'Ceallaigh Award. I am extremely honored to receive the Award. I also feel a real sense of humility, and I would like to take the opportunity to thank several colleagues who have been especially important to my career in cosmic-ray physics.

There are several people whom I regard as mentors. First is Martin Pomerantz, who hired me at Bartol and supported my efforts to make the transition from particle theory to cosmic-ray physics. The first cosmic-ray conference I attended was Denver in 1973 where I learned much from discussions with Gaurang Yodh and Arnold Wolfendale. I think Gaurang was the first with whom I collaborated on papers in the field. I like to think of my relationship with Arnold over the years as one of friendly competition. It was through Frank McDonald, in the run up to the La Jolla conference in 1985, that I first got involved in organization of the ICRC conference series.

I would also like to mention several people who have been important to me as we worked together to investigate various aspects of cosmic rays: first, Francis Halzen and Michael Hillas; then Todor Stanev and Paolo Lipari; and more recently, Giles Barr and Ralph Engel. On the experimental side, I owe much to Alan Watson and Paul Evenson in connection with work in Antarctica.

I am very grateful to everyone who made this award possible for me.

Yodh Prize:

The Yodh Prize was established in 1998 to recognize a scientist whose research career has made substantial contribution to the understanding in the field of cosmic rays. The research should have had a

major impact in the field. There is no age restriction. The prize was endowed by Gaurang and Kanwal Yodh to the University of California Irvine Foundation. The award consists of a prize of US \$ 2000. The winner will be invited to visit the University of California, Irvine, to present a colloquium to the faculty and students in the Department of Physics and Astronomy at some time during the following year. The awardee will be selected by an international committee of distinguished scientists in the field of cosmic rays and astro-particle physics.

Prof. Wenzel announced the winner of the Yodh Prize 2005 to be Prof. A. Michael Hillas, who retired as Professor from the University of Leeds a few years ago and requested Prof. Arnold Wolfendale to read out the laudation for Prof. Hillas.

Laudation for Prof. A. Michael Hillas for the Yodh Prize 2005:

It gives me considerable pleasure to say a few words about Michael Hillas – a man for whom I have always had a high regard, and warm affection. Michael is a brilliant Physicist who has contributed mightily to our subject. My first real contact with him was in 1965 at the time of the London Cosmic Ray Conference, where he presented the results of calculations on the propagation of EAS through the atmosphere. We were doing something similar but his work was better!

Michael had already worked on a topic for which he became famous, in the previous decade, on the subject of Cherenkov radiation. Michael's ideas, not only with regard to the up-and-coming subject of Gamma Ray Astronomy, but also in other areas of Cosmic Ray Astrophysics, have proved invaluable and he is a very worthy Yodh Prize winner.

Prof. Michal Hillas could not be present at the ICRC 2005 at Pune due to bad health and the Yodh Prize was accepted on his behalf by his colleague from the University of Leeds, Prof. Alan Watson. A few weeks later, Prof. Hillas sent by e-mail his thanks to the cosmic ray community and the members of the Yodh Prize Selection Committee for the honor with the following statement.

Response of Prof. A. Michael Hillas for the acceptance of the Yodh Prize

I regret that I have again, to my regret, to miss an ICRC, and so I am not able to respond in person to the award of the Gaurang and Kanwal Yodh Prize. However, I am glad to be able to give surprised thanks for this award, which I can assure you will influence my work in the next few years, for when one has passed the formal age of 'retirement' from supposedly useful employment one is tempted to turn much of one's attention to different directions. Such an award, then, with its message that there are knowledgeable people who do value my activities, provides a strong push to keep me back on the rails. Indeed, it has seemed to me to be somewhat reprehensible to spend a lifetime seeking the origin of cosmic rays, and to end still not having a clear demonstration of how they come to be; so the encouragement offered by this award can be taken to mean "go on, and try harder".

I am honoured to be associated with the name of the award, as I am of course an admirer of Gaurang Yodh himself, and not only for his perpetual contribution to our mutual enthusiasms, and his personal example of fortitude, but even for surprising psychic qualities revealed once when he rescued my suitcase in Lhasa.

So I greet my fellow cosmic-ray enthusiasts warmly, and thank them for this encouragement.

Shakti P. Duggal Award:

The Shakti P. Duggal Award was established in 1983 to recognize outstanding work by a young scientist in the field of cosmic ray physics. The award consists of a prize of US \$1200. In addition, the winner will be invited to visit the Bartol Research Institute at the University of Delaware to present a colloquium at some time during the following year.

The intent of this award is to recognize and inspire young cosmic ray scientists at an early stage of their careers. The recipient will not have attained the age of thirty-six on 1 January 2005. Subject to this limitation, any person from anywhere in the world who has contributed to the field of cosmic ray physics or particle astrophysics is eligible for consideration. Selection of the prize winner will be made by an International Committee.

Prof. Wenzel announced the winner of the Shakti P. Duggal Award 2005 to be Dr. Jim Hinton of the Max Plank Institute for Kernphysik, Heidelberg and requested Prof. Werner Hofmann to read out the laudation for Dr. Hinton.

Laudation for Dr. Jim Hinton for the Shakti P. Duggal Award 2005:

It is a pleasure to say a few words introducing Jim Hinton as this year's winner of the Duggal award for outstanding young scientists in the field of cosmic ray physics. Despite his young age – he just turned 31 – Jim has worked in and contributed to a wide range of experiments and topics in cosmic ray physics. His work on cosmic ray physics has so far taken him to four continents – Europe, America, Antarctica and Africa.

Jim did his Ph.D. thesis with Alan Watson and Jeremy Lloyd-Evans, using the SPASE scintillator air shower array and VULCAN air Cherenkov array at the South Pole, measuring the mass composition of cosmic rays near the knee. While the experiment did not give the final answer concerning composition – even now, there seems to be really no final answer, despite much progress – the work provided a perfect training ground in both a geographically and an intellectually challenging environment.

As a post-doc, Jim initially continued working with Alan Watson, primarily on the interpretation of data from the Haverah Park air shower array, thereby moving up a couple of decades in cosmic ray energy. His principle contribution involved the analysis of nearly horizontal air showers at ultra high energies. Access to the archival Haverah Park array was nontrivial, but in a different sense compared to modern problems of data access: some events from the 1970's were stored on paper printouts on high shelves in a crowded room, and it paid off that Jim is an enthusiastic rock climber: he had to climb over all kinds of stuff to get hold of the data!

Jim's analysis was the first to place limits on the flux of UHE photons, and hence on the existence of super-massive relic particles. The key Phys. Rev. Letter resulting from this work is in citation databases classified as a "famous" paper. Emphasis on the physics with horizontal air showers has increased ever since, and the topic is an essential part of the AUGER program, where Jim remained involved in the simulation studies.

From Leeds, he then moved on to the Enrico Fermi Institute in Chicago, and entered the field of high-energy gamma-ray astronomy. Jim worked on the enlargement and upgrade of STACEE, one of the solar-tower Cherenkov experiment aiming to lower the energy threshold of ground-based gamma-ray detectors. He provided key results on the light curve and spectrum of Mrk 421, but – luckily for us – decided

– in retrospect quite rightly - that imaging Cherenkov telescopes were more promising than solar-tower arrays and he inquired about a job in Heidelberg, working for HESS.

When Jim interviewed for a job at our institute, in 2002, he made an excellent impression; it was immediately clear that this was the person we wanted to hire and we were extremely happy when he accepted our job offer – but only after inspecting rock-climbing sites in our area. In the three years since then, Jim has made seminal contributions to HESS and has become a key person within the project.

We at Heidelberg owe a significant share of the success of H.E.S.S. to Jim, who has contributed to a wide range of hardware work, software development and physics analyses. The long list of his achievements includes, for example, the development and commissioning of the central trigger system of the H.E.S.S. telescopes, which has allowed to lower trigger thresholds and to increase recording rates significantly.

In the area of data analysis, Jim was the central person in the analysis of galactic center data, resulting in two papers where he is the main author, and more in the pipeline. He has made major contributions to the analysis and understanding of the observations of the supernova remnant RXJ 1713.7-3946 – published in *Nature* – and to the H.E.S.S. Galactic Plane survey, published in *Science*. Jim's most recent work – the study of diffuse gamma-ray emission from the Galactic Center region - forms one of the HESS highlights for this conference.

Jim is an exceptionally talented young physicist, with very good judgment and a remarkable breath, equally at home debugging a trigger board with a soldering iron or discussing the physics interpretation and modeling of multi-wavelength data. With this award, he receives well-deserved recognition of his work, and of course the encouragement to proceed in his career.

Prof. Wenzel presented the Shakti P. Duggal Award 2005 to Dr. Jim Hinton and remarked that his excellent work on cosmic ray physics, which has so far taken him to four continents – Europe, America, Antarctica and Africa, has been given due recognition in the ICRC 2005 in the fifth continent, Asia. He invited Dr. Hinton to give his acceptance remarks.

Response of Dr. Jim Hinton for the acceptance of the Shakti P. Duggal Award 2005

Firstly I would like to say how honoured I am to receive this award and would like to thank the ICRC organizers, C4 commission and the Bartol Research Institute. That I have received this award is due in no small part to the great success of the HESS experiment. I would therefore like to thank the whole of the HESS Collaboration for their efforts, in particular my colleagues in Heidelberg. I would also like to acknowledge the support and assistance of all the people who have helped me over the years. In particular Werner Hofmann, not only for his very kind words just now but for his strong support and encouragement during my time with HESS. Also Simon Swordy, Rene Ong, Tom Gaisser and finally Alan Watson for his continuous support over the last decade.

Thank you very much.