

**Second Kathmandu Astrophysics School (KAS18)**  
**Prithvi Narayan Campus, Pokhara (Nepal) – 10-17 June 2018**

**Closing remarks**

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*KAS18 SOC Chair & Faculty member*

Distinguished guests, esteemed colleagues, dear students, Namaste!

I was smitten by Nepal from the first time I found myself surrounded by its friendly, enthusiastic and hard-working people, living at the base of majestic and inspiring peaks. Thus, I am honored that we are here today to celebrate the achievements of the KAS18 graduates. In this second edition of the school, students were introduced to basic concepts and computational techniques in astrophysics and cosmology. And for the first time, we have been able to offer travel support, lodging and meals for our attendees. For me, this week has been intense but fantastic: I feel I have grown not only professionally, but also on a personal level, leaving with friendships both newly made and strengthened.

I am very proud of the dedication and commitment that I have seen in the students who spent this week here in Pokhara. I wish all the students I teach to, would have the eagerness and passion to learn and improve that the KAS18 graduates have shown. Our program was extremely intensive and packed with a combination of classes, hands-on activities and coding. Yet, the students embraced the school with an incredible thirst for knowledge, working very hard and showing an impressively steep learning curve. At the same time, I have seen them full of positive energy, establishing new friendships without borders, which I hope will grow in the future. I think this is a clear example that demonstrates the power of science as a driver to foster cooperation, and the power of team play to solve difficult problems together. I hope that by contributing to promote active learning and an evidence-based problem solving mindset, the whole society represented by our graduates today will benefit from it in the long term. Also, I am enthusiastic about the level of gender equity and diversity of our class: 12 females and 13 males coming not only from different regions of Nepal but also internationally, and bringing with them a wide range of backgrounds. This diversity has enriched the school enormously, and it is also fully reflected in the achievement awards for KAS. What we experienced this week clearly demonstrates the benefits for the society stemming from actively promoting stronger participation of women in science and technology.

We arrived at the end of the school with success, and I have many to thank for the achievements I have seen in our KAS graduates this week, in addition to our two generous financial supporters, the International Astronomical Union Office of Astronomy for Development (IAU OAD) and the Laby foundation.

First, I am very grateful to the Prithvi Narayan Campus - represented by the Campus Chief Prof. Dr. Chandra Bahadur Thapa - for kindly hosting the school, and in particular to the Department of Physics,

represented by its Head Prof. Parashuram Poudel. The Campus kindly made available to us all the facilities needed for smoothly running the program. A special “thank you” goes to Associate Professor Kul Prasad Dahal, who coordinated the local organization efficiently and with great passion. From the first day I arrived here in Pokhara, Kul has made me feel so especially welcome on campus and in this city, and he has been single-mindedly proactive in ensuring that our students and our lecturers were placed in the best conditions to learn and teach.

Thanks also to all the people that contributed to make the stay of students and lecturers so effortless and pleasant. In particular, I would like to thank Sabin Gautam, a graduate of the first KAS, and a MSc student here on campus, for volunteering his time to effectively contribute to the local organizing committee. Another special “thank you” goes to Raju Chalise for leading his efficient kitchen team that cooked flavorful and nutrient Daal-Bhat, different each day. The quality of the meals here on campus kept our body and mind energy levels high throughout the week.

Of course, the school would not have been possible without our lecturers, who volunteered their time despite being busy academics, and traveled to Pokhara from far corners of the world:

Thanks to Clare for being an inspirational lecturer on professional development. I am confident that the KAS18 graduates will take home the valuable ideas and suggestions in the area of teaching and learning with great enthusiasm, and apply them in their academic and professional careers. This, in turn, will contribute to inspire future generations of Science and Mathematics students, multiplying by orders of magnitude the potential benefits of the school. Clare has also been the driving force of the scientific organization, so I thank her and all the members of the broader organizing committee who are not here today for designing an outstanding academic program. Clare had been already invaluable to determine success of the first school, and for KAS18 she did even more. In particular, we should all thank her for leading the fund raising by successfully approaching both the IAU OAD and the Laby Foundation.

Thanks to Jack for effectively teaching Python: I have seen him always busy running around the room to help students with encouraging words and a great smile. He developed an incredibly clear and effective set of exercises and tutorials to guide the students from essentially no knowledge of the language to being capable to write code comfortably. This enabled all the computational project results we heard earlier today. I have seen a fantastic improvement and growth of confidence by all the students from Monday to Friday, at a level that far exceeded my initial expectations. Jack has been an outstanding coach to guide a cohort of dedicated and receptive students!

Thanks to Manisha for enthusiastically joining the faculty of the school and for providing incredibly valuable insight to improve the program. To give just one example, she suggested the idea of student peer review for the final reports, which I personally consider has been the single best academic improvement of KAS18 over the previous edition. While Manisha is still a PhD student, she has shown the academic and pedagogical maturity typical of successful colleagues at more advanced stages of their careers. She has been an amazing lecturer, mentor and role model for the students, and an example of how Nepali scientist, in particular women, are contributing to advance astronomy on a global level. I think Nepal should be very proud of her, and I feel privileged to have had the opportunity to meet and work with her this week.

Thanks to Mustafa for being the most clear cosmology lecturer I ever heard. I wish I could have had him as my lecturer when I was a student! I learned a lot from his teaching style and philosophy this week, which I hope to be able to apply to improve my own teaching. His dedication in helping has been unmeasurable: I have seen him using every opportunity to make himself available to guide and inspire the students, not only during the time on campus, but also by spending additional time in the evenings and even at night. Last but not least, Mustafa has enthusiastically embraced the KAS spirit to promote physics education and research in Nepal. We had many conversations this week where he has provided incredibly deep insight regarding the ingredients we need to define a successful long-term plan. I hope we will have an opportunity to continue collaborating to develop this vision.

Finally, a huge, incredible “thank you” goes to my wife Daiana: She is the one who initially suggested the idea of an astrophysics school for the students, the first time we visited this beautiful country together five years ago. Since then, she has continuously encouraged me to keep dedicating to the project. Not only she has been always supportive of the time I spent organizing the school and lecturing here in Nepal, but she enthusiastically provided so much effective advice to shape the program. KAS would not have been born without her!

The KAS idea is still in its infancy, with significant room to grow in scope and impact. Our graduates will leave with an experience that has enriched them and projected their professional future forward. However, we have been able to reach only a small number of students, and only for a limited amount of time. To make a meaningful contribution to the continued development of Nepal, I am hoping that the ideas and valuable connections which have been seeded here in Pokhara with both students and academics on campus will blossom in the future.

To progress further I think it is crucial we focus on strengthening connections and partnership with local educational institutions, and with organizations that can both operate continuously, and reach a larger cohort of students. In addition to colleagues such as Kul in the Physics department, I have been extremely impressed by the current achievements and by the vision of the Physics Research Initiative Pokhara, driven by the dedication and passion of Dr. Kapil Adhikari. I thoroughly enjoyed being a speaker for the PRI Science Discussion Series, presenting my research to an enthusiastic audience that showed a level of curiosity and critical thinking absolutely on par to what I experience when I give public talks in Australia. Fostering critical thinking and problem solving skills, that can then be applied effectively to a wide range of social and economic issues, is the single most powerful argument I would use to promote the benefit of investment in fundamental research areas such as astrophysics.

Finally, I hope that the KAS family, which now includes the 2018 graduates and the colleagues and friends here in Pokhara, will continue to stay connected beyond the duration of the school. This is a key ingredient to sustain the program in the long term, and to achieve impact in growing the reputation of Nepal as an emerging nation for innovation in science and technology education and research.