

Astro-Projects for the Students of Rural Areas in Nepal

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Abstract:

This poster presentation showcases the efforts of the Pokhara Astronomical Society (PAS) in promoting astronomy education in Nepal. Despite the country's beautiful skies, access to primary education remains a challenge in many rural areas. PAS aims to use astronomy to improve the quality of education for students. Through various initiatives, such as introducing astronomical kits, utilizing software, and engaging in hands-on activities, students are exposed to the fascinating world of astronomy and STEM. PAS also provides teacher training programs and advocates for including astronomy in the curriculum. By leveraging its volunteers' knowledge and research, PAS continues to promote astronomy education in Nepal.

Introduction:

Nepal is a South Asian country located in the Himalayas with a population of 29.1 million and an area of 147,181 sq. km. The Government of Nepal established the Observatory and Science Museum Development Board in 1992 to promote astronomy, astrophysics, and cosmology research and education. While astronomy is included in the science curriculum at lower and secondary levels, it only comprises 10% of the total course and 5% at higher secondary levels. To address this, the Pokhara Astronomical Society (PAS) was formed to organize presentations and observation sessions in schools and colleges, as well as for the general public. PAS aims to promote awareness and inspire the younger generation in astronomy and space science.

Tribhuvan University is the only university that offers an astrophysics and cosmology course at the master's level since 2005. Recently, the Space Science course has been introduced in Bachelor level degree at the same university. The general public is very interested to participate in the observation of celestial bodies but doesn't have easy access to such planetariums and observatories. Pokhara Astronomical Society (PAS), therefore started organizing presentations and observation sessions in different schools, colleges, and for the public. Students have shown much interest in these kinds of programs and our programs are fulfilling their thirst for the knowledge on Astronomy and live observation of celestial objects in the night sky. Few astronomy clubs have been established which serve to spread awareness, and inspire young generations and the general public.

Methodology:

Our work focuses on three main areas: education, outreach, and research.

Education: -Organizing GTTP-Nepal Workshops and Astrocamps for 5 years

-Trained around 100 school teachers through hands-on sessions, workshops, and observation

-Conducting astronomy classes in different schools using PowerPoint shows, Stellarium, documentary videos, and Q&A sessions

2.Research:- Assisting B.Sc. Physics students carrying out university projects

-Analyzing data and astronomical images using Salsa J and Aladin software

3.Outreach:-Visiting schools from different districts and regions

-Conducting observation and workshop programs for students and teachers in far villages and rural areas

-Assisting students in building and operating telescopes

-Teaching students to build water rockets and facilitating rocket launches

We collaborate with national and international organizations such as local schools, colleges, and universities, Nepal Astronomical Society, Gandaki Province of Science and Technology, National Academy of Geo and Space Science, Global Hands-on Universe, and Universe Awareness. We also engage with government personnel to invest in this field and construct infrastructures for research activities. We conduct programs in major astronomical events like the Transit of Venus, the Solar and Lunar Eclipse, webinars, and World Space Week, among others.

Future Plans:

We will continue our work to engage educators, instructors, enthusiasts, students, and the public in scientific activities and to increase science literacy. We are working to establish an astronomical research center in Pokhara including Astro-library, planetarium, and observatory in the near future. We are looking for international institutions for organizing/conducting various activities here in Nepal. We can do diverse research projects with international S&T/astronomy communities together.

How can you contribute?

1.Invite us to various international conferences/workshops which can give us exposure and connections to scientific communities.

2.Make available astronomical tools and kits like telescopes and other educational materials.

3.Collaborate for different scientific activities or extend your programs in Nepal with us.

4.Come and visit Nepal and our activities. Involve in our programs yourself. Teach what you can to the school students of Nepal and communicate with our society.

Conclusion:

Despite limited general astronomy education and no established planetarium or space museum, the efforts of independent organizations in Nepal are increasing awareness of astronomy and space science. Our work has inspired students, trained science teachers, and raised public awareness of the importance of astronomy education. The use of Stellarium and telescopes has shown promise in engaging students, and the GTTP workshop is an effective platform for involving teachers. International cooperation is crucial for improving science education dissemination techniques.

Acknowledgment:

We would like to express our sincere thanks to the Nepal Academy of Science and Technology (NAST, Dr. Sudeep Neupane, GHOU- Nepal Chapter Coordinator, Nepal Astronomical Society (NASO), Gandaki Province Academy of Science and Technology (GPAST), Department of Physics, Prithvi Narayan Campus, Pokhara for their collaboration and technical assistance.

Reference:

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First PAS Astronomy Camp 2022