



❖ CSSTEAP Newsletter ❖

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Summary of Speech on the Inauguration of CSSTEAP 6th RS & GIS Course at IIRS, Dehradun on 2 October, 2001

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Today is a memorable day for me as I feel privileged and honoured for the inauguration of Sixth Post Graduate Course on Remote Sensing and GIS of Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) by me, at Indian Institute of Remote Sensing (IIRS), Dehra Dun (Uttaranchal).

As you are already aware CSSTEAP has been playing a very important role in human resource development in the region by conducting number of courses since its inception in November, 1995 and has trained about 320 persons from 39 countries of this region. Such a success in capacity building in the region by the Centre, has been possible due to dynamic leadership of Prof. B L Deekshatulu, Director, CSSTEAP and the active support of Centres of ISRO/Dept. of Space.

Asia-Pacific region is constrained by serious shortage of natural resources and capital, low agricultural and industrial productivity and large scale illiteracy. Although the average food production of the countries in this region has been increasing every year, the faster increasing population has resulted in serious food shortage. The rapid rate of deforestation has been causing severe soil erosion, sedimentation of watersheds, floods and desertification in this region. In Asia-Pacific region over-exploitation of available natural resources for meeting the ever increasing demand for food, fodder, fuel and fibre has led to the serious degradation of land and water resources as well as environment. In addition to this, large areas in Asia-Pacific are disaster prone and huge losses of human life and property, caused by natural calamities every year, are very common.

Application of Space Technology, viz. Satellite Remote Sensing, Satellite Meteorology and Satellite Communication etc. are gaining importance in many countries in Asia-Pacific Region for sustainable natural resources and environment management and development, monitoring, assessing and predicting natural disasters as well as rescuing and rehabilitating disaster affected people. Geoinformatics Technology consisting of Remote Sensing, Geographic Information System (GIS) and Global Positioning System (GPS) has proven as an effective tool for

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natural resources inventory, monitoring and management for sustainable development. Space based Remote Sensing Technology with varying spatial, spectral and temporal resolutions capabilities has found an important tool for generating reliable baseline information on natural resources at scale ranging from macro to micro levels. GIS technology is very useful for storing, updating and retrieving easily all information, generated through Remote Sensing and other techniques and also for arriving at alternate development scenarios using both Remote Sensing derived and collateral information.

In Asia-Pacific region which is characterized by large variation in natural resources productivity and rapid rate of environmental degradation and higher proneness to natural disaster, there is an urgent need for more and more trained scientific manpower with knowledge in the use of Remote Sensing and GIS Technology for effective management of natural disasters and resources for national development. The organization of RS & GIS related educational programmes by the CSSTEAP is of great significance in the augmentation of national capabilities in use of Geoinformatics Technology in the Asia-Pacific countries. As you are aware, since its inception CSSTEAP has conducted five courses on RS & GIS at IIRS, Dehradun benefiting 105 participants from 20 countries of this region. This is the sixth course and 20 participants from 13 countries of this region are attending.

I wish the successful completion of this course. I hope all the participants will successfully complete this course and after returning to their countries will apply the knowledge gained through this course and will make valuable contribution to national economy and social progress and in furthering the goals of CSSTEAP.

Photometric and Spectroscopic Observation of VW Cephei eclipsing binary star

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Photometric and spectroscopic observations of the - eclipsing binary star VW Cephei was carried out. VW Cephei, is one of the best studied W Uma type binary system. It is bright and of very short period too. A brief description of the telescope and the backend instruments used for carrying out the project work was given. For photometric observations, ST -7 CCD camera on 28 cm Schmidt Cassegrain telescope was used at Bisei Observatory. While giving details of comparison star, check star, finding chart for the program stars, details of observing procedure, was also outlined the image processing steps that one uses for the analysis of CCD images. After carrying out the analysis, the light curve of the star was produced, which looks quite symmetrical. The details of observing and analysis procedure for the spectroscopic observations and for the program star using 1.01m telescope at Bisei Observatory in the spectral range 390-760 nm with a resolution of 0.7 nm at H-alpha were also described. Several spectral lines including H-alpha, Na-D2, MgI, FeI and H-beta in the final calibrated spectra of the program star were identified.

This is summary of one year follow up project under final stage of evaluation for award of M.Sc. (Tech.) degree.

Sixth RS & GIS Course

The Sixth Post Graduate Course on Remote Sensing and GIS (RS & GIS) which has started at Indian Institute of Remote Sensing, Dehradun on October 01, 2001 is being attended by 20 participants from 13 countries of Asia-Pacific region including India.

The course is now running in Module-II and this Module is completed on March 31, 2002. This module consists of RS & GIS applications-Thematic optional streams such as Agriculture and soils, Geosciences,

Forestry and Ecology, Water resources, Marine science and Urban analysis and also a common stream covering various subjects dealing with advances in RS & GIS; Satellite Meteorology; Earth Processes; Sustainable Development and Integrated Natural Resource Management; Natural Disaster Monitoring and Management and Environmental Analysis, Monitoring and Management. Each of the course participants have chosen one optional stream out of the above mentioned six thematic disciplines based on academic qualification, experience and requirements of their parent organisations. The course curriculum was covered by the faculty of IIRS and additional / guest lectures on specialised topics were also arranged for the benefit of course participants. The guest lecturers were from various Indian organisations/Institutes/Universities such as SAC & PRL, Ahmedabad; NRSA & ADRIN, Hyderabad, IISc, Bangalore, Andhra University, FSI, WII, SOI & WIH, Dehradun; NIH-Roorkee; NSP-Delhi, ISRO Headquarters, Bangalore etc. Two International guest faculty Dr. Jean Claude Souyris, CNES (France) and Prof. Le Huy Ba, Institute of Environment and Resources, Vietnam National University (Vietnam) were also invited to deliver lectures on Radar Data Processing and Environmental Pollution Monitoring and Management using RS & GIS, respectively. An educational visit of two weeks duration to various centres/organisations of Dept. of Space/ISRO viz NRSA, Hyderabad, ISAC and RRSSC-B, Bangalore and also to Andhra University, Vishakhapatnam was also organised during this module. The course participants also got opportunity to experience Indian rich historic, cultural and social heritage during the visits to various Indian cities such as Hyderabad, Bangalore, Mysore & Vishakhapatnam etc.



Course participants in a field excursion

Fourth Meeting of ISRO/DOS - CSSTEAP Coordination Committee

The 4th meeting of the ISRO/DOS-CSSTEAP Co-ordination Committee was held on January 22, 2002 at CSSTEAP Headquarter at IIRS Campus, Dehradun. Additional Secretary, DOS; Scientific Secretary, ISRO, Under Secretary, MEA, Govt. of India, Director CSSTEAP, Directors of SAC, NRSA & PRL, Dean IIRS, Deputy Director (T&S), EOS, ISRO, Course Directors and Course Coordinators of various courses of CSSTEAP etc. attended the meeting. Various issues related to functioning of CSSTEAP such as host country support-Building/Facilities; Research activities of the centre; Institutionalization of the centre; Recognition of faculty; Budget for the year 2003; Inter-linkage with ISRO-DOS centres; next Director of CSSTEAP, etc. were discussed.

OBITUARY

CSSTEAP is deeply grieved to intimate the sad and sudden demise of Mr. Ramendra Kumar Jha on 23 March 2002. He was a budding scientist from Central Department of Hydrology and Meteorology, Tribhuvan University, Nepal, who had undergone CSSTEAP PG Course on SATMET during July 2000-March 2001. We all pray God to give peace to the departed soul and courage to his family members to bear this irreparable loss.

Third SATCOM Course

The Third Post Graduate Course on Satellite Communications (SATCOM) which started at Space Applications Centre, ISRO, Ahmedabad on August 01, 2001 is going to end on April 30, 2002. This course is being attended by 14 participants from 8 countries including India.

During this period, the entire theoretical & practical part of the course curriculum will be completed. The topics like Communication Systems, Earth Station Technology, Broadcasting using Communication Satellites, Network Planning, Management & Operational issues of Satellite Communication Systems; Specialized Applications & Future Trends; Operational Communication Satellite Systems; Digital Signal Processing & Satellite Communication for Development, Education & Training have been extensively covered.

Now the participants are working on the Pilot Projects allotted to them. The Pilot Projects are conducted on topics of interest for the participants and are oriented towards the one year research projects that the participants are supposed to undertake in their home countries. The project definitions is based on the needs of the participant's country. Topics are oriented towards Communication System Design, Network Planning, Domestic Satellite Communication and Satellite based Business Networks etc.

The participants are required to complete the Pilot Projects within 10 weeks time. In April, 2002 these Pilot Projects will be evaluated by a team of experts on Satellite Communications. Thereafter, presentation of these Pilot Projects will be arranged at Space Applications Centre, Ahmedabad and Andhra University, Visakhapatnam.



Course participants at Fatehpur Sikri, Agra

Visit of ESA (European Space Agency) Team to CSSTEAP

A three members team from ESA consisting of Mr. Jean-Pol Poncelet, Mr. Giuseppe Giampalmo and Mr. Karl Berrguist visited Headquarters of CSSTEAP at IIRS Campus, Dehradun on Jan 05, 2002. Possible future co-operation between ESA & CSSTEAP on various issues related to academic activities and data support etc. were discussed. The team members interacted with the ongoing RS & GIS course participants of CSSTEAP and also made technical presentations on Space Programmes including Remote Sensing activities of ESA. Later they also took a round of the various facilities of CSSTEAP and IIRS.



Director, CSSTEAP, Dean, IIRS alongwith ESA team members

Inauguration of New Office Building for CSSTEAP at IIRS

The new office building for CSSTEAP at IIRS, Dehradun was inaugurated on January 2, 2002 by Prof. B.L. Deekshatulu, Director CSSTEAP in the presence of Dr. S.S. Meenakshisundram, Additional Secretary, DOS, Govt. of India; Dr. R. R. Naval Gund, Director, NRSA, Hyderabad; Dr. P.S.Roy, Dean IIRS and Staff of IIRS and RRSSC-D and course participants of CSSTEAP and IIRS.

The foundation stone of this Building was laid by Dr. K. Kasturirangan, Chairman, Space Commission and Chairman, CSSTEAP Governing Board on 6th July 2000.

The building has a plinth area of 910 sqm. in ground plus two floors. The ground floor houses the AC plant room, library, room for visiting scientists, data archives and a pantry. The UPS room and panel room are also situated on the ground floor. However access to these two rooms is provided from the outside. The Director's office, conference hall, office, and air handling unit room are situated at the first floor. The GIS lab, DIP lab and Class room are situated on the second floor. The construction of the building commenced on 4th of August 2001. The work was completed in all respects on 15th December 2001.



New CSSTEAP Office building at IIRS Campus

Director Speaks

Prof. B.L. Deekshatulu

After six and half years in office and when I sit down to write my last column, I am drawn to re-understand the name of this institution. The earliest draft makers of the mandate of this institution named it as 'centre' and my years in office have brought me to appreciate how appropriate the term has been. Truly, the CSSTEAP has become a 'centre' from which many activities have radiated far and wide into the region. At the same time, I see that we have sustained a flow of support from several initiatives to the 'centre'. On the other hand, the 'centre' has been some kind of focus to space science and technology institutions in the region on an 'as is where is' basis, which means that the 'centre' did not evolve a redundant facility and system for itself. But it provided the focus to students within the widespread wealth of institutional facilities in India and elsewhere. In essence, it derived the common and cumulative benefit of several institutions into its channel of academic programmes.

In this way, I must say that the CSSTEAP has come a long way since its inception on November 1, 1995. It has conducted 11 long term courses and several short courses in the four core disciplines of space science and technology, benefiting 340 students from 39 countries. It took off from the initiative supplied by UN-OOSA and grew up with support from Department of Space, Government of India. The members of Governing Board, Advisory committee, Boards of Studies, Andhra University, UN-ESCAP, Asia Pacific countries and several theme co-ordinators and directors of host institutions have provided unstinted support and - guidance. With these, I see 'that an enormous amount of resources and efforts concentrated at the 'centre' in a unique way. It has been a very rewarding experience for me to be at the centre of all these attention and human effort.

In a world where most initiatives start on a grandiose scale and whither gradually, this one has proven to be a sustainable model. The continuous financial support from Department of Space, Government of India is one of the prime factors contributing to this. In the formative years of the Centre, the department provided access to its large facilities. While the mechanism of governance of the centre matured rapidly, buildings, laboratories and funds were dedicated to the activities of the centre and today, CSSTEAP has access to an enviable resource base.

The diploma and master's courses are still the flagships of CSSTEAP. The benefits from these have steadily accrued and we now see that our students are part of national efforts and international teams in the region. This is

a tribute to the flag bearers of the centre. But this is how it was all envisaged and I am sure, the very purpose of creation of this initiative was to generate a capacity for the region on a self sustainable mode. These long term programmes have evolved a strong and competitive academic character with their vibrant syllabi, teaching resources, procedures and high recognition. I would be too happy to see that other upcoming centres draw inspiration and support from this.

With its fine academic tradition, the Centre is stepping into a period of research consolidation and possibly an advisory role. We have tried to create a databank of countries and representative of large volumes of earth resources data for use by students and participating institutions. This work has to continue and yield fruits. Once in place, this hub of research results and databank could yield itself to the network of institutions and individuals of the region. I also see a potential of developing distance education/web based training of some appropriate nature around this at some point of time in near future. Likewise, the centre also needs to reach out to decision makers, administrators, economists, sociologists and stake holders of different nature, on its path to become an intelligent and authentic advisory body, providing solutions on the core areas of space science and technology. Having seen the determination, support and commitment of the players of this initiative called CSSTEAP, I have no doubts that the 'centre' will draw naturally the requests for advice in the region, in the coming years. Having been in a position to generate scientific capacity in the region on a sustained mode, the centre today finds itself on the anvil of a distinct necessity to achieve financial self sustenance, I am sure the supporters of the centre will find a way in setting it on its path of self sustenance. Therefore, with so much achieved, there is so much to be done. It has been very fulfilling for me to be associated with this emerging force in its initial years. The interaction with students, staff, administrators, policy makers, governmental representatives and international delegates. The Governing Board members & especially the chairman has been an opportunity bestowed by destiny. I have enjoyed my term and indebted to all those, who made this journey possible.

To all Directors of UN regional Centres for Education in Space Science and Technology - Please send us information regularly, so that we could publish in the CSSTEAP Newsletter

COURSES IN PROGRESS

- ★ Third 9 months Post Graduate course in Satellite Communications (SATCOM) at SAC, Ahmedabad from August 01, 2001 (14 Participants from 8 countries are attending.)
- ★ Sixth 9 months Post Graduate course in Remote Sensing and GIS (RS & GIS) at IIRS, Dehra Dun from October 01, 2001 (20 participants from 13 countries are attending).

FORTHCOMING COURSES

- ★ International short course on Emerging Trends in Satellite Meteorological Applications with special Emphasis on Microwave Remote Sensing at SAC, Ahmedabad during May, 6-17, 2002.
- ★ Third 9 months Post Graduate course in Satellite Meteorology & Global Climate at SAC, Ahmedabad from August 1, 2002
- ★ Third 9 months Post Graduate course in Space and Atmospheric Science at PRL, Ahmedabad from August 1, 2002.
- ★ Seventh 9 months Post Graduate Course in RS & GIS at IIRS, Dehra Dun from October 1, 2002.

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CSSTEAP welcomes the views and opinions of the readers of the Newsletter. Short Communications on space science and technology education which may be relevant to Asia Pacific Region are also welcome. Views expressed in the articles of the Newsletter are those of the authors and do not necessarily reflect the official views of the Centre.