



The 'Chandrayaan' team felicitated

The Kerala State Council for Science, Technology & Environment (KSCSTE) and the Centre for Earth Science Studies (CESS) organized a felicitation for the Chandrayaan team for their unparalleled achievement in the launch of Chandrayaan I. The felicitation was held at a glittering function graced by the Hon'ble Chief Minister of Kerala, Sri. V. S. Achuthanandan, Ministers and several other dignitaries, at Co-bank Towers, Thiruvananthapuram on 11 December 2008. Almost all the architects of the Chandrayaan mission lead by Dr. G. Madhavan Nair, Secretary, Department of Space & Chairman, ISRO were present. The large audience comprised of a galaxy of scientists from ISRO and other institutions, academicians, professionals, students and dignitaries from various walks of life. The Hon'ble Chief Minister of Kerala, Sri. V. S. Achuthanandan, was the first to offer felicitations by presenting 'Ponnada' and memento to each one of the team members. The ISRO team consisted of Dr. G. Madhavan Nair, Chairman, ISRO; Dr. K. Radhakrishnan, Director, VSSC; Sri. P. S. Veeraraghavan, Director, IISU; Dr. T. K. Alex, Director, ISAC; Sri. M. C. Dathan, Director, SHAR; Sri. M. K. G. Nair, Director, LPSC; Sri. George Koshy, Project Director, PSLV; Dr. S. Ramakrishnan, Director-Projects, VSSC; Sri. A. Bhaskaranarayana, Scientific Secretary; Dr. V. Adimurthy, Associate Director, VSSC; Sri. H. N. Madhusudhana, Director, BEA; Dr. C. Venugopal, Vehicle Director, PSLV C-11 and Sri. M. Annadurai, Mission Director, Chandrayaan.



Hon'ble Chief Minister Sri. V. S. Achuthanandan presenting 'Ponnada' and a memento to Dr. G. Madhavan Nair, Chairman, ISRO and the leader of the 'Chandrayaan team' during the function

Prof. C. Karunakaran Endowment Lecture: Space for development of Kerala

Prof. C. Karunakaran Endowment Lecture 2008, the eighth lecture in the series was



Dr. G. Madhavan Nair, Chairman, ISRO, and Secretary, Department of Space, Government of India, delivering the Prof. C. Karunakaran Endowment Lecture

delivered by Dr. G. Madhavan Nair, Chairman, ISRO and Secretary, Department of Space, Government of India after the felicitation of the 'Chandrayaan I' team at the Co-bank Towers, Thiruvananthapuram on 11 December 2008. Dr. M. Baba, Director, CESS gave the background of the Endowment Lecture and remembered the significant contributions made in the area of earth sciences by Prof. C. Karunakaran, the founder Director of CESS. In his lecture, Dr. Nair focused mainly on the applications of earth observations for the development of Kerala. He asserted that Kerala, the land of rivers, backwaters, plantations, beaches and forest, is endowed with rich natural resources. The State's major task, according

After the presentation ceremony felicitations were offered by Sri. C. Divakaran, Hon'ble Minister for Food, Civil Supplies and Animal Husbandary; Sri. Binoy Viswam, Hon'ble Minister for Forest and Housing; Sri. P. J. Thomas, Chief Secretary and Dr. C. G. Krishnadas Nair, former Chairman & Managing Director, Hindustan Aeronautics Ltd. Earlier Dr. E. P. Yesodharan, Executive Vice President, KSCSTE welcomed the dignitaries. Dr. N. P. Kurian, Head, Marine Sciences Division, CESS proposed the vote of thanks.

In this issue.....

- * The 'Chandrayaan' team.....
- * Space for development of Kerala.....
- * Dr. M. Baba honoured.....
- * Prof. Chapman in CESS.....
- * All other regular features

Continued in page 2

Director Speaks



With about twenty percent reduction in the rainfall during the last season it is feared that there is going to be an acute drinking water scarcity across the State during this summer. It is not the first time such a situation is encountered. With copious rainfall, even after discounting the reduction during the last season, and considering the standard per capita requirements, the rainfall should have been sufficient to cater to the needs of the people during the impending dry season. However, as most of the rainwater gets drained off within a few hours of time due to lack of sufficient surface water storage and groundwater recharge facilities, the shortage is acutely felt.

The State's major drinking water needs are met from groundwater. An efficient management system through proper stock taking, controlled abstraction, natural/artificial recharge and quality control can go a long way in addressing this problem. Among these the first two are to be achieved through the State's existing regulatory system. The latter aspects, though addressed randomly, need to be taken up more intensively. In this context there is an imminent need to initiate an efficient groundwater harvesting and recharge mission.

Towards this all factors facilitating the recharge and all the available conservation systems need a scientific evaluation to improve efficiency and to plug loop holes. What role the afforestation, control on sand mining from rivers/flood plains, better infiltration/rain harvesting structures, serious implementation of existing regulatory systems and conjunctive use of surface and groundwater, can play in this process needs a closer look. Methods to increase the spread of watershed schemes also needs to be examined urgently.

All the knowledge and capabilities in the State and elsewhere can be put together in this mission. The key players have to be alerted on this requirement. The climate change which is feared to bring vagaries in rainfall is already here. Also with new tools and technologies becoming more accessible, the goal of producing more groundwater resources is achievable. A mission of this nature will help us to eliminate fears of drinking water scarcity during the summer for ever.

Dr. M. Baba

Space for development.....

Continued from page 1

to him, is to manage its land resources, namely soil, water, plant and animal systems within the agro-ecological zones to meet the human aspirations and challenges of the future taking care of conservation of the environment. Dr. Nair also mentioned about the important studies, applying remote sensing techniques, carried out for natural resource inventory to suggest suitable measures for the sustainable



Hon'ble Minister Sri.C. Divakaran during his presidential address

development of the region. The major I S R O initiatives in this direction are Integrated Mission for Sustainable Development to generate a database on natural resources, landuse and landcover mapping on 1:250,000 scale to provide information on net sown area for different cropping seasons, scientific surveying (inventory) of coffee plantations at the behest of Coffee Board, survey of potential and actual area under sericulture for mulberry cultivation in different parts of Kerala, wasteland inventory and groundwater prospects mapping for the entire State on 1:50,000 scale, for wasteland reclamation and locating bore wells and the generation of comprehensive database by CESS and KSREC for management of natural resources in the State. He also highlighted the cadastral level mapping of Tirurangadi

Development Block of Malappuram district using high resolution satellite imageries as a pioneering effort carried out by CESS. The Chairman, ISRO also hailed the CESS works on the mapping and monitoring of the coastal zone and the marine protected areas, vital/ critical coral reefs habitat and study of impact of sea level rise for the coastal areas of Kerala and Lakshadweep. The development of a methodology to locate schools of fish using ocean colour and sea surface temperature and operational forecasting of potential fishing zones was another applauded work done with ISRO assistance.

Dr. Madhavan Nair also elaborated on the space-based societal development efforts in Kerala. He specifically mentioned the applications of societal relevance such as the tele-education programme (100 interactive classrooms with two channels setup in Kerala), School network for distance education (1,500 ROTs in Malappuram District under EDUSAT Utilization Programme), training to the parents and teachers of the mentally retarded children (6 centres each of the Cent



Hon'ble Minister Sri. Binoy Viswam offering felicitations

ral Institute of Mental Retardation (CIMR) and C-DAC have been connected through EDUSAT), the Tele Health and Medical Education Network (6 Government Medical



The 'Chandrayaan I' team and the dignitaries on the dias during the felicitations



A view of the audience

Colleges and 2 super specialty hospitals are connected with 9 District Hospitals and 1 Community Health Centre at Attapady), the space technology based disaster management support system (The State Disaster Control Room is linked with National Disaster Control Room at New Delhi, National Remote Sensing Centre at Hyderabad, and other institutions engaged in disaster management related activities) and Village Resource Centres (18 Village

and services into the societal fabric. He expressed confidence that the Centre for Earth Science Studies with multi-disciplinary faculties and expertise would continue to contribute to the development of the State, which would be the greatest tribute to Prof. Karunakaran.

At the beginning of his lecture, Dr. Madhavan Nair expressed his gratitude to CESS for having given him the opportunity

Prof. C. Karunakaran Endowment Lecture



This Endowment Lecture is instituted in memory of the founder director of CESS late Prof. Cheruvari Karunakaran. The first lecture in the series was delivered by Dr. Kasthurirangan in June 2000. The other eminent personalities who had given the lectures are Dr. Anil Kakodkar, Prof. M. S. Swaminathan, Dr. Harsh. K. Gupta, Dr. V. S. Ramamurthy, Dr. Salim Romani and Prof. S. K. Tandon. The present lecture by Dr. G. Madhavan Nair was the eighth in the series.

Resource Centres have been set up, in association with Amrita Vishwa Vidya Peetam, Kerala State Planning Board and M.S. Swaminathan Research Foundation. Another 30 VRCs are soon going to be added)

In the concluding part of his lecture, Dr. Nair affirmed that, in the coming years, ISRO is augmenting the space observation capabilities, to observe the Earth System with increased repetitivity, in all weather conditions, providing capability of deriving critical parameters for atmospheric and climate studies as well. The ultimate objective, he stated, is to energize a social process to enhance the quality of life and empower the community through seamless integration of space technology products

to deliver the Prof. C. Karunakaran Endowment Lecture. He started his lecture by paying tributes to Prof. C. Karunakaran: “Prof. Karunakaran, a visionary, an outstanding Geologist, an arduous explorer, is remembered for his many contributions in the field of Earth Sciences.”

Dr. Nair also gave an overview of the Indian Space Programme which had a humble beginning in early 1960s at Thiruvananthapuram. He stated that the Indian Space Programme was implemented through a well orchestrated planned strategy of first demonstrating the efficacy of the space systems using the available international missions, followed by developing experimental satellites such as BHASKARA and APPLE missions, and

later, transgressing to operational IRS and INSAT systems. The development of operational launch vehicles also followed through a planned sequence of development efforts through SLV and ASLV to reach the current operational PSLV and GSLV systems. He added that today India has an enviable constellation of both IRS and INSAT satellites in operation. The Chandrayaan-1 launched using the indigenous work-horse launcher, the PSLV, on October 22, 2008, marks yet another great achievement by India.

Publications

Santhosh Kumar, E.S, Radhakrishnan, C., Kunhikannan, J.F., Veldkamp and Mohanan, C.N (2008) Rediscovery of *Maesa velutina* Mez (*Maesaceae/Myrsinaceae*): An Endemic and Endangered species of the Western Ghats, India. *Rheedea*, 18 (1): 39-42.

Training

Leica Geosystems conducted training on Mobile Matrix Survey for the Scientists and Research Fellows of CESS during 3-7 November, 2008

Dr. M. Baba, Director honoured



Dr. Harsh K. Gupta, President, Geological Society of India honouring Dr. M. Baba, Director CESS, for his valuable contributions to Earth Sciences, during the Golden Jubilee function on 12 October, 2008 at Bangalore.

CESS Review Committee



The Review Committee constituted by the Kerala State Council for Science Technology and Environment to review the functioning of CESS and to suggest recommendations for the future, had its final sitting during 22-23 September 2008. The members of the Committee were Dr. Victor Rajamanickam, Prof & Head, Disaster Management, SASTRA University; Dr. R. Sadasivan Nair, Director, Geological Survey, Kerala Circle and Prof. M. Ravindran, Advisor, Rural Technology Action Group, Chennai (Chairman).

Nomination

Dr. M. Baba, Director has been nominated as the Chairman of the Technical Committee by the Industries Department, Government of Kerala, to study the environmental aspects of Clay and Bauxite mining in Kasaragod District.

Exhibition

CESS participated in the KSCSTE's stall which was part of the Kerala Government pavillion in the India International Trade Fare at the Pragathy Maidan, New Delhi held during 14-27 November 2008. The Kerala pavillion was adjudged the second best and Council's stall the best in the fare.

CESS participated in the exhibition organized by the Sree Narayana College, Cherthala as part of birth centenary celebrations of late Sri. R. Sankar during 19-26 October 2008.

Seminar/Workshop

Dr. M. N. M. Nair participated in the World Aqua Congress at Delhi and presented paper entitled 'Heavy metals in the reservoir sediments of the Periyar river basin, Kerala, India'.

Ms. Ahalya Sukumar delivered a talk on 'Sources of drinking water and sanitation in Tamil Nadu' in the National seminar on 'Climatic change and emerging diseases' at the Madurai Kamaraj University, during 12-13 December, 2008 and chaired a session.

Ms. Ahalya Sukumar presented a paper on 'Spatio-temporal growth of Trissur Corporation, Kerala: A study using Satellite imagery and GIS' in the XXVIII INCA International Conference held at Ahmedabad during 4-6 November 2008.

Sri. B. Sukumar presented a paper on 'Delineation of Agriculturally drought prone areas in Wayanad district, Kerala using satellite imagery and GIS' in the XXVIII INCA International Conference held at Ahmedabad during 4-6 November 2008.

Ms. Divya V presented a paper on 'Regional Variation in Development: A cartographic appraisal using GIS in Kozhikode District in Kerala' in the XXVIII INCA International Conference held at Ahmedabad during 4-6 November 2008.

Ms. Deepthi P presented a paper on 'Regional Variation in Development: A cartographic appraisal using GIS in Kottayam District in Kerala' in the XXVIII INCA International Conference held at Ahmedabad during 4-6 November 2008.

Ms. Divya U.M presented a paper on 'Regional Variation in Development: A cartographic appraisal using GIS in Malappuram District in Kerala' in the XXVIII INCA International Conference held at Ahmedabad during 4-6 November 2008.

Ms. Saniya N presented a paper on 'Assessment of Crop Combination Regions and Agro-ecological Regions of Palakkad District, Kerala: A study in GIS environment' in the XXVIII INCA International Conference held at Ahmedabad during 4-6 November 2008.

Dr. Chapman on Climate Change



Dr. David S. Chapman, Professor of Geology and Geophysics in the University of Utah, USA delivered a talk on Climate

Change in CESS on 22 December 2008. Dr. Chapman's thermal studies group has several active research projects centered on the theme of temperatures in the Earth's crust, heat flow, and geologic and hydrologic processes that affect temperatures. His long term study on the 'geothermics of climate change' evaluates how borehole temperature profiles can best be used to reconstruct past changes of temperature on the Earth's surface and therefore, is an important component of global warming studies.

Retirement



Sri. P. Gopakumar, Assistant Controller of Finance, CESS and Administrative Officer, at the KSCSTE on deputation retired on 31 October 2008

Christmas and New Year Eve celebration



Members of the CESS family with their friends and children celebrated Christmas and the New Year on 31 December 2008. The event was organised by the CESS Recreation Club.