Workshop on Capacity Building
Group on Earth Observations
São José dos Campos, SP, Brazil, May 29 – 31, 2006

The CRECTEALC/ UN Programme

José Marques da Costa
Secretary-General (CRECTEALC)

UNITED NATIONS
CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

- Office for Outer Space Affairs – UN OOSA
- United Nations Programme on Space Applications
  - Ahmedabad, India (1985),
  - Mexico City, Mexico (1986),
  - Lagos, Nigeria (1987)
  - Dundee, United Kingdom (1989)
- “The capabilities of developing countries to effectively contribute to the solution of global, regional and national environmental and resource management problems could only be acquired through long-term intensive education.”

UNITED NATIONS
CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

- The United Nations General Assembly, in its resolution 45/72 of 11 December 1990 endorsed the recommendation of the Committee on the Peaceful Uses of Outer Space that:

  "*... the United Nations should lead, with the active support of its specialized agencies and other international organizations, an international effort to establish* ***regional Centres for Space Science and Technology Education*** *in existing national/regional educational institutions in the developing countries*."

UNITED NATIONS
CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

MAIN OBJECTIVE

- The principal objective of the Centres is the development of skills and knowledge of university educators and research and application scientists, in those aspects of space science and technology that can **enhance social and economic development** in countries of the region.

UNITED NATIONS
CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

SPECIFIC OBJECTIVES

- Improvement of skills and knowledge of university educators, environmental research scientists and project personnel in the design, development and application of remote sensing, satellite meteorology and related technologies for subsequent use in national and regional development and environment management programmes including bio-diversity protection.

UNITED NATIONS
CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

SPECIFIC OBJECTIVES

- Development of skills on satellite communications including those associated with rural development, long distance education, delivery of health services, disaster mitigation, air and maritime navigation, and network/linkage of the region's professionals and scientists, government establishments and industries in order to facilitate the exchange of new ideas, data and experiences.

UNITED NATIONS
CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

INITIAL PROGRAMMES

- Remote sensing and geographic information systems
- Meteorological satellite applications
- Satellite communications and global-positioning systems
- Space and atmospheric sciences

UNITED NATIONS
CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

EDUCATIONAL CURRICULA

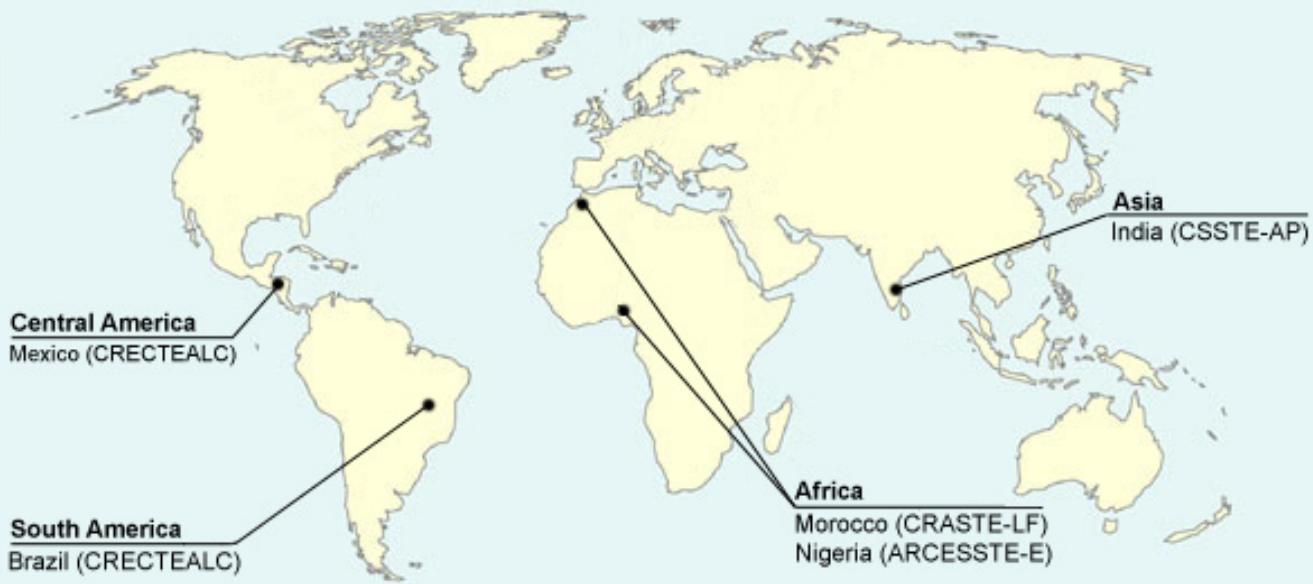
- Educational curricula, as suggested in the United Nations Office for Outer Space Affairs - UNOOSA document A/AC.105/649 of 1996 and in the United Nations Committee on the Peaceful Use of Outer Space - COPUOS documents A/AC.105/L.238 to 241.

UNITED NATIONS
CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

- **FEBRUARY-MARCH 1995**: UN Meeting of Experts on Curriculum Development, Granada, Spain.

- **SEPTEMBER 3-7, 2001**: UN Expert Meeting on the Regional Centres for Space Science and Technology Education: Status and Future Developments, Frascati, Italy.

Regional Centres for Space Science and Technology Education (affiliated to the United Nations)



Map CENT-03-01 Rev.1
June 2003

Office for Outer Space Affairs (UN-OOSA)
United Nations

UNITED NATIONS
CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION

- **CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION IN WESTERN ASIA**

  Al al-Bayt University

  Jubayha, Ammman

- **NETWORK OF SPACE SCIENCE AND TECHNOLOGY EDUCATION AND RESEARCH INSTITUTIONS OF CENTRAL - EASTERN AND SOUTH-EASTERN EUROPE**

  Bulgaria and Poland

CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION IN ASIA AND THE PACIFIC (CSSTEAP) – INDIA
(Affiliated to the United Nations)

- Established in 1995 with headquarters in Dehradun.
- Access to the facilities, infrastructure and expertise of the Indian Institute of Remote Sensing (IIRS) in Dehradun, the Space Applications Centre (SAC) and the Physical Research Laboratory (PRL), both at Ahmedabad.
- Governing Board comprises 14 members from 14 countries and 2 observers.
- Conducted 22 long-term postgraduate courses and 17 short-term programmes.
- Has benefited 30 countries and 650 scholars.
- Since 1999 has achieved the status of an institution of excellence.

AFRICAN CENTRE FOR SPACE SCIENCE AND TECNOLOGY EDUCATION IN FRENCH LANGUAGE (CRASTE-LF) – MOROCCO (Affiliated to the United Nations)

- Established in 1998 based at the Mohammadia School of Engineers of University Mohammed V in Rabat-Agdal.
- Access to the facilities, infrastructure and expertise of the Royal Centre of Space Remote Sensing (CRTS), Scientific Institute (IS), Agronomic Institute and Veterinary Hassan II (IAV), National Institute of Telecommunications (INPT) and Directorate of National Meteorology (DMN).
- Governing Board composed of 16 members from 13 countries in the region and one observer from UN-OOSA.
- Carried out 6 long-term postgraduate courses and 10 short-term programmes.
- The long-term programmes were attended by more than 70 scholars from 16 countries in the region.

AFRICAN REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION IN ENGLISH (ARCSSTE-E) – NIGERIA (Affiliated to the United Nations)

- Established in 1998 at Obafemi Awolowo University (OAU), Ile - Ife.
- Operates under the auspices of the National Space Research and Development Agency (NSRDA).
- Uses facilities provided by the OAU and the Regional Centre for Training in Aerospace Surveys (RECTAS).
- Has already offered 6 postgraduate courses and eight short-term programmes.
- 30 scholars from 9 countries in the region attended the long-term courses.

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN

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National Space Research Institute - INPE
São José dos Campos, São Paulo, Brazil

National Institute for Astrophysics, Optics and Electronics – INAOE
Tonantzintla, Puebla, Mexico

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN
CRECTEALC
(Affiliated to the United Nations)

- **MARCH 1997**: Brazil and Mexico signed the “Agreement to establish the Centre for Space Science and Technology Education for Latin America and the Caribbean”.

- **SEPTEMBER 2000**: Agreement of Headquarters firmed by CRECTEALC with the Government of Brazil.

- **OCTOBER 2002**: Operational Agreement firmed by CRECTEALC with the Government of Mexico.

- **JUNE 2003**: Affiliation Agreement firmed by CRECTEALC with UN OOSA.

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN

CRECTEALC

(Affiliated to the United Nations)

STRUCTURE

GOVERNING BOARD

ADVISORY COMMITTEE

SECRETARIAT

CAMPI

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN
CRECTEALC
(Affiliated to the United Nations)

GOVERNING BOARD

- Principal policy-making organ of the Centre.
- 01 representative of Brazil, 01 representative of Mexico and 01 representative of each country of the region, or from other interested country which have signed an Agreement of Cooperation with the Centre.
- Established in October 1999.

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN
CRECTEALC
(Affiliated to the United Nations)

SECRETARIAT

- Main executive organ of the Centre
- Coordinate the activities of the Campi
- Represent the Centre at national and international institutions
- Headed by the Secretary-General, who is the first administrative authority of the Centre.

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN CRECTEALC
(Affiliated to the United Nations)

ADVISORY COMMITTEE

- Composed by prominent representatives of the national Governments, private industry and academic and research communities.

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN
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CAMPI

- The Campi are responsible for the planning, the organization, the implementation and the administration of education programmes in the areas concerning the competence of the Centre.
  - Campus Brazil
  - Campus Mexico

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CAMPUS BRAZIL

Director: Dr. Tania Maria Sausen

Host: INPE

São José dos Campos, São Paulo, Brazil

tania@ltid.inpe.br

- Specialization courses (nine months long)
- Graduate courses (pilot project developed in the student country)
- Short and middle term courses
- Seminars and Workshops

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CRECTEALC
(Affiliated to the United Nations)

CAMPUS MEXICO

Director: Dr. José Guichard Romero

Host: INAOE

Tonantzintla, Puebla, Mexico

- Specialization courses (nine months long)
- Graduate courses (pilot project developed in the student country)
- Short and middle term courses
- Seminars and Workshops

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN
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- **INTERNATIONAL COURSE ON REMOTE SENSING AND GIS**

Campus Brazil

– Fundamental on Remote Sensing and GIS	400hours
– Remote Sensing and GIS Applications	260
– Complementary Activities	260
– Pilot Project and Monograph	400
Total:	1320

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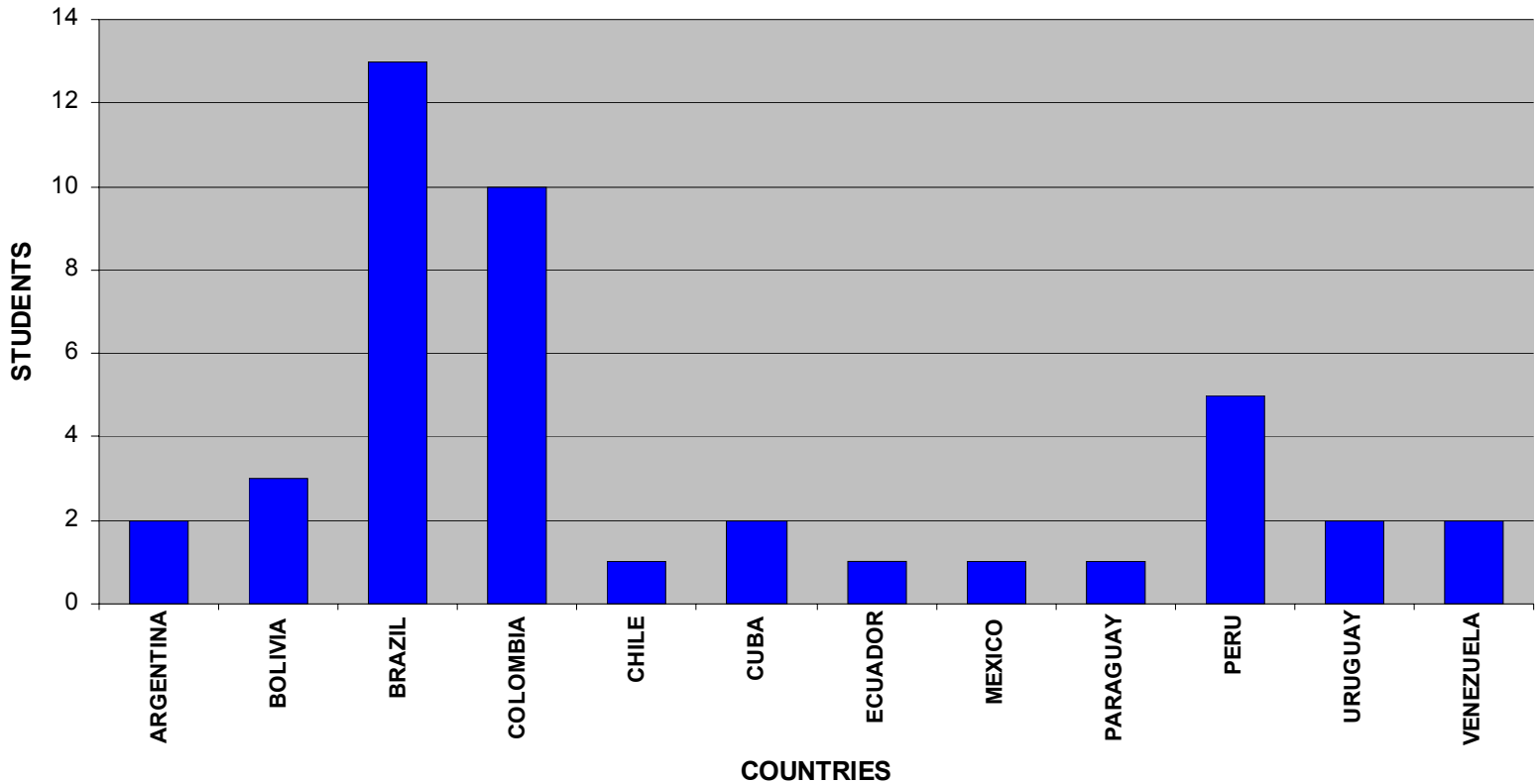
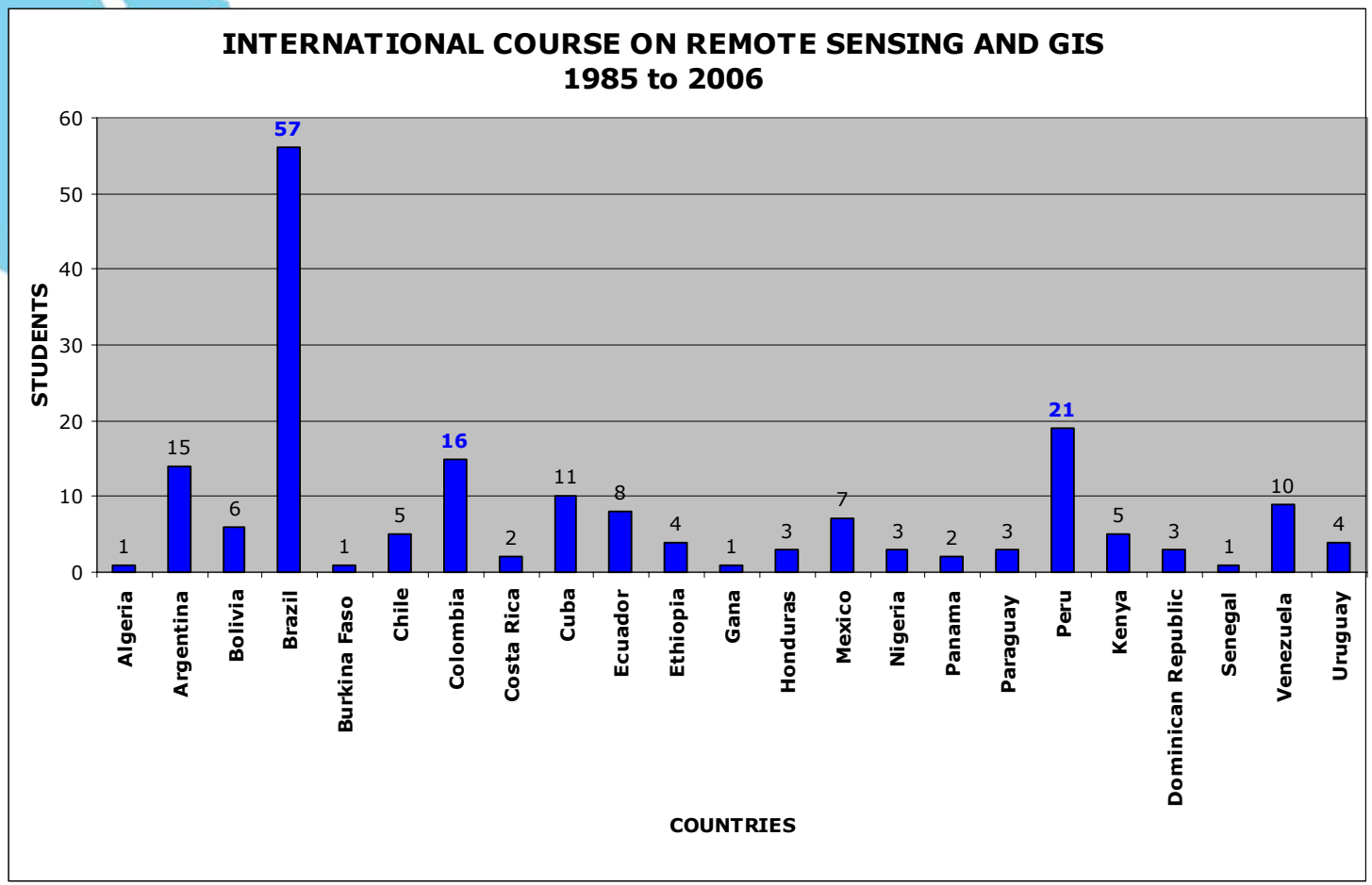
INTERNATIONAL COURSE ON REMOTE SENSING AND GIS
2003-2006



REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICA AND THE CARIBBEAN



REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN
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International Course on Remote Sensing and GIS

- From 1985 to 2002 the Course had 7-month duration and was promoted under the responsibility of the National Institute for Space Research - INPE of the Ministry of Science and Technology-MCT of Brazil.

- From 2003 to 2005, 36 students have already been graduated on this course under the coordination of the CRECTEALC/Campus Brazil. This year 7 students should be graduated and the total will reach 43 students.

- Up to December 2006 the Course will be formed 189 specialists from Algeria, Argentine, Bolivia, Brazil, Burkina Faso, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Ethiopia, Ghana, Honduras, Kenya, Mexico, Panama, Paraguay, Peru, Nigeria, Senegal, Uruguay and Venezuela.

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN
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Support

- National Institute for Space Research – INPE/MCT
- National Council for Scientific and Technological Development – CNPq/MCT
- University of the United Nations – UNU
- Office of Outer Space Affairs of the United Nations – UN OOSA
- Organization of the American States – OAS

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN
CRECTEALC
(Affiliated to the United Nations)

- First Seminar for Information and Dissemination of CRECTEALC

  Mexico City, Mexico, from 16 to 17 December 2003

  Representatives from Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama and Venezuela.

- Seventh Latin American Conference on Space Geophysics - 7th COLAGE

  Atibaia, São Paulo, Brazil, March 28 to April 2, 2004

  165 participants from Argentine, Bolivia, Chile, Costa Rica, Cuba, England, France, Germany, Greece, Israel, Italy, Mexico, Peru, Switzerland, United States, Uruguay and Taiwan.

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN

CRECTEALC

(Affiliated to the United Nations)

- First Seminar on Education and Environment in Latin America: emphasis on the use of remote sensing to study global and regional climate changes, **Cordoba, Argentina**, 26-29 October 2004.

  29 participants from Argentine, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Spain, Guatemala, Mexico, Panama, Dominican Republic, Uruguay and Venezuela.

- First Seminar on Meteorological Satellite Applications and Global Climate in Latin America, **Cachoeira Paulista, São Paulo, Brazil**, 14-16 December 2004.

  25 participants from Argentina, Brazil, Colombia, Costa Rica,Cuba, Panama, Dominican Republic, Venezuela and Uruguay.

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- Seminar on GNSS in Latin America: present and future perspectives, São Leopoldo, RS, Brazil, 20 – 22 July, 2005.

- First Seminar on the Application of Remote Sensing for Coastal Ecosystems Studies, Belém, Pará, Brazil, April 2006.

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FUTURE

- Increase of number of Members.
- VII Governing Boarding Meeting.
- First meeting of the Advisory Committee.
- Promotion of capacity building on space science and technology education through training courses, seminars, workshops and research networks, as well as open and distance learning activities taking the advantage of the rapid development of internet-based technologies.
- Promotion of educational programs for high school students on relevant topics of space science and technology.

REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICAN AND THE CARIBBEAN
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COOPERATION

Memorandum of Understanding - MOU
IAI x CRECTEALC
April, 2003

Priority Areas for Collaboration

- Education, research, and development of applications of remote sensing, satellite meteorology and space atmospheric sciences related to global change.

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COOPERATION

DISTANCE EDUCATION

- Latin American Institute of Educational Communication - ILCE
- Latin American Cooperation of Advanced Networks - CLARA
- Organization of the American States - OAS

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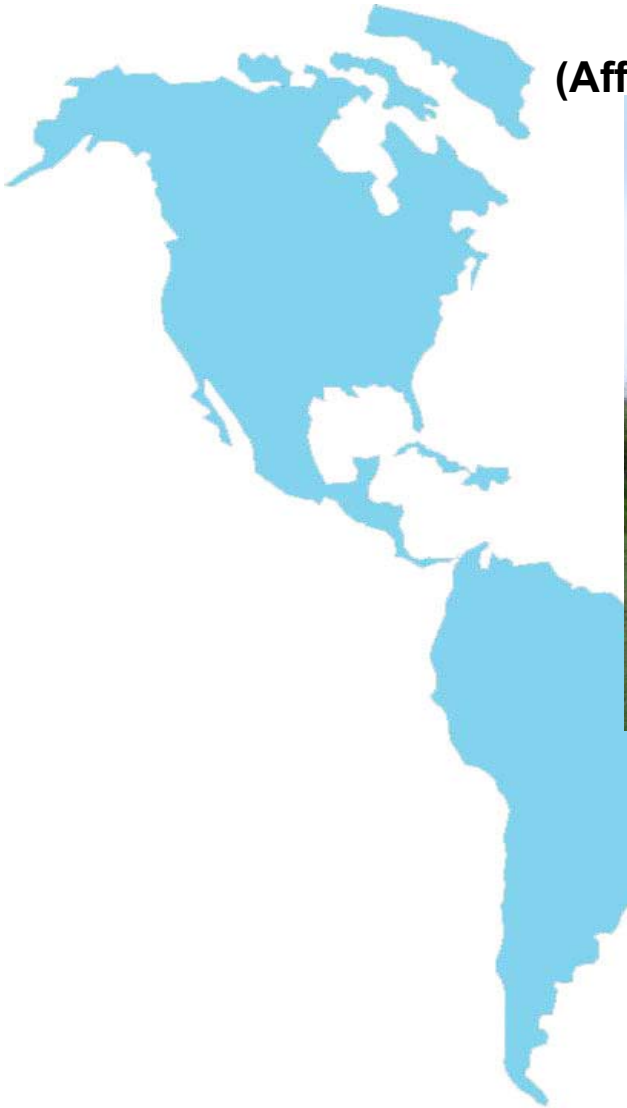

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REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION FOR LATIN AMERICA AND THE CARIBBEAN

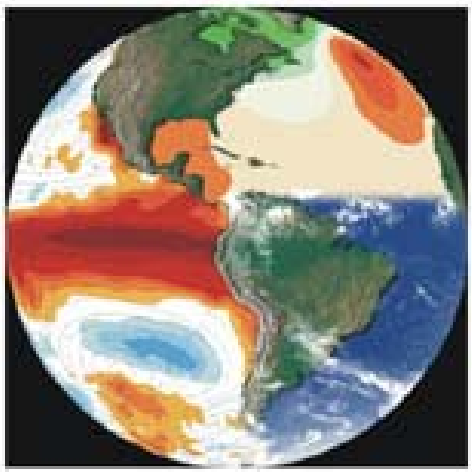
I SEMINÁRIO SOBRE METEOROLOGIA POR SATÉLITE E CLIMA MUNDIAL

"ENSO e Variabilidade Climática na América Latina"

14 A 16 DE DEZEMBRO DE 2004.

CENTRO REGIONAL DE EDUCAÇÃO EM CIÊNCIA E TECNOLOGIA ESPACIAIS - CRECTEALC
CAMPUS BRASIL

Organizado juntamente com
INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS - INPE
CENTRO DE PREVISÃO DE TEMPO E ESTUDOS CLIMÁTICOS - CPTEC
ORGANIZAÇÃO DOS ESTUDOS AMERICANOS -OEA
DIVISÃO DE ESPAÇO EXTERIOR DA ONU



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CRECTEALC
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I Seminário sobre Educação e Meio Ambiente na América Latina

"Uso de sensoriamento remoto para estudos de mudanças climáticas"

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Thank you.

http://www.crectealc.org/

http://www.inpe.br/unidades/cep/atividadescep/crectealc/