

Regional Workshop for Latin American Astronomers on  
Data Processing from the Chandra and XMM-Newton Space Missions:  
An Advanced School for Astronomers working at all Wavelengths  
São José dos Campos, SP - Brazil  
December 4-13, 2001

Second Announcement

**Organisers**



Committee on Space Research



International Astronomical Union



MINISTÉRIO DA CIÊNCIA E TECNOLOGIA  
INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS



**Objective**

The objective of the workshop is to encourage and develop use of the Chandra and XMM-NEWTON data archives by scientists in Latin America.

**Workshop venue**

This workshop will be held at the Instituto Nacional de Pesquisas Espaciais (INPE) in São José dos Campos, Brazil, on December 4-13, 2001.

**About São José dos Campos**

Practical Information

Thematic

The scientific themes are intended to foster use of Chandra and XMM in multi-wavelength astronomy, to relate to existing research in Latin America and to science for which Chandra and XMM are proving especially effective, such as clusters and groups of galaxies, AGN, X-ray binaries, neutron stars and black holes, and emission from hot plasmas.

Half the time of the workshop will be spent in practical classes led by software experts from NASA and ESA and participants will learn how to set up and use the appropriate software systems and will start or carry out a short project. The other half will be spent in lectures about equally devoted to data processing and statistics and to topics in X-ray astronomy. The working language of the workshop will be English.

**Programme**

The main science topics have been provisionally selected as follows:

Galaxy clusters and groups

Galaxies

AGN

Galactic sources—X-ray binaries, CVs, neutron stars, black holes

X-ray emission from hot plasmas

These will be covered by reviews biased towards work with Chandra and XMM, but which also emphasise as far as possible links to optical work in view of the likely optical background of many participants.

The computer classes will be conducted by software experts from NASA and ESA and will cover all aspects of the software from setting up the systems and familiarisation with their use to practical utilisation.

The data processing and statistics lectures will include some topics-- fitting techniques, basic time series analysis and statistics— which will probably be familiar to most participants at least in the sense they will have encountered them at some time in the past. Hence the objective with these will be to recapitulate the basics briefly and link them to the software tools available under CIAO, Xanadu and SAS, treating them essentially as black boxes, and concentrating on the underlying assumptions they make rather than the details of how they work. Other topics, such as X-ray spectrum determination, may be less familiar and will be covered more extensively.

The lecturers for these various topics are:

Dr Keith Arnaud (Goddard Space Flight Center, NASA, USA)

Dr Christian Erd (Space Science Department, Estec, Netherlands)

Dr Carlos Gabriel (VILSPA, ESA, Spain)

Dr Francisco Jablonski (INPE, Brazil)

Dr Mariano Mendez (SRON, Netherlands)

Prof Trevor Ponman (University of Birmingham, England)

Dr Randall Smith (Center for Astrophysics, Harvard, USA)

Prof Peter Willmore (University of Birmingham, England)

The final timetable is as follows:

Day	8 am	9 pm	10 am	11 am	2 pm	3 pm	4 pm
1		Registration	Opening ceremony	Introduction to X-ray astronomy	The missions I-- Chandra spacecraft and instruments	The missions II-- The XMM spacecraft and instruments	Data reduction I- CIAO
2	Data reduction II- SAS	X-ray data analysis I	Emission mechanisms I	computer class-setting up CIAO and SAS	computer class continued	computer class continued	computer class-getting to grips with CIAO and SAS
3	computer class continued	computer class continued	X-ray data analysis II	Emission mechanisms II	Galactic sources I	Computer class-- start of project	computer class-- project
4	computer class-- project	computer class -- project	Galaxies, Clusters and Groups I	Statistics I	Galactic sources II	computer class-- project	computer class-- project
5	Galaxies, Clusters and Groups II	Galactic sources III	X-ray data analysis III	Statistics II			
6	Sunday-- visit to a...	local beach all day					
7	computer class-- project	computer class-- project	X-ray data analysis IV	Statistics III	Galactic sources IV	computer class-- project	computer class-- project
8	computer class-- project	computer class-- project	Galaxies, Clusters and Groups III	AGNs I	Statistics IV	computer class-- project	computer class-- project
9	computer class-- project	computer class-- project	Galaxies, Clusters and Groups IV	AGNs II	Galactic sources V (SNR, etc)	computer class-- project	computer class-- project
10	computer class-- project	computer class -- project	X-ray data analysis V	Statistics V	computer class-- project	poster session	Closing meeting

**Target audience**

The workshop is intended for young post-docs and postgraduate students working in any area of astronomy, for final-year undergraduates expecting to start research in astronomy and for advanced but isolated researchers wishing to use astronomical space data and needing to acquire the relevant skills to participate more fully in the work of the international space research community. A number of scholarships will be available which will cover a substantial part of the cost of travel and subsistence. These will be allocated competitively. Click here to obtain an application form for financial support.

**Registration Form**

A Registration Form can be obtained by clicking here. There is no registration fee, but in view of the commitment required by the practical sessions, the Organizing Committee will operate a strict selection procedure. The last date for registration is November 1st, 2001, but if financial support is required earlier registration is strongly advised. In order to assist the selection process, each intending participant is asked to include with this form duly completed, a letter of recommendation from an astronomer of standing who is familiar with his work and a one-page account of her/his current research and how it could benefit from attendance at the workshop.

Some experience in using Windows software and in the use of computers for astronomical data processing is highly desirable, and experience in using Linux software will be valuable.

The working language used in the workshop will be English and applicants must be sufficiently proficient to follow the lectures and interact with the demonstrators in the laboratories efficiently.

This meeting is the first in a series of planned COSPAR Capacity-Building Workshops, designed to create lasting bridges between researchers in developing and developed countries in a variety of space related domains. It is co-sponsored by IAU and INPE.

**Organizing Committee**

The membership of the Organizing Committee for the workshop is as follows:

J Braga (Brazil)

A Caraminana (Mexico)

E Gotthelf (Mexico)

H Haubolt (UN)

W Hermsen (NL)

H Levato (Argentina)

M Machado (Argentina)

D Page (Mexico)

A Reisenegger (Chile)

T Sausen (Brazil)

T Villela (Brazil)

N White (US)

P Willmore (UK, Chair)

Local Arrangements

Carlton Plaza Hotel

Rua Presidente Bernardes, 73

Jardim Paulista

CEP: 12216-130, São José dos Campos - SP

Phone Number: 55 12 3942-7666

Room rates:

Single room: US\$29,00

Double room: US\$36,00

Triple room: US\$40,00

The breakfast is included

The buffet meal at the hotel is R\$5,00

**Hotel facilities:**

Four stars hotel

Garage

Parking

Swimming pool

Fitness room

Piano bar

Conference rooms

Restaurant

Laundry

The buffet meal at the INPE is R\$7,65/kg

**Projects**

Each participant will be asked to come with a proposal for a short project which is either to be carried out or at least started during the practical sessions in the workshop. This might well be related to their existing research. A certain number of project topics will also be suggested by the organisers, for those participants who do not bring their own proposal. These may be suitable for small teams to carry out, since this is often the best way of making good progress in a short time as we have here. As an example, such a collaborative project could be based on the Galactic Centre and might involve, say, 6 participants who would work on X-ray aspects of such topics as X-ray binaries, SNRs, IR sources, diffuse emission, X-ray absorption and a comparison with M31.

At the end of the workshop, each participant will be asked to produce a project report of not more than two pages suitable for showing at a poster session which will be held during the last afternoon