



Chandra/CIAO Workshop

23-27 October 2017

National Centre for Radio Astrophysics

Tata Institute of Fundamental Research

CHANDRA
X-RAY OBSERVATORY



Giant Metrewave Radio Telescope

The National Centre for Radio Astrophysics, Tata Institute of Fundamental Research (NCRA-TIFR), Pune and the Chandra X-Ray Center (CXC) in Cambridge, MA are happy to announce a workshop for Ph.D. students, post-doctoral fellows and early-career researchers in the field of Astronomy and Astrophysics to work with the Chandra Interactive Analysis of Observations (CIAO) software on Chandra observatory data. The workshop will focus on getting the most out of the Chandra data, including discussions of CIAO capabilities and the impact of calibration on cutting edge science. The aim is to provide an exposure to X-ray and radio astronomy using Chandra data as well as low frequency data from the Giant Metrewave Radio Telescope; the latter nearing completion of a major upgrade. More information on CIAO can be found at <http://cxc.harvard.edu/ciao/>.

The workshop will be held at NCRA-TIFR, Pune during 23-27 October 2017 and will be conducted by members of the CIAO team from CXC. The workshop is limited to a maximum of 40 registered participants. There is no registration fee and all participants would be provided local support (boarding and lodging) for the duration of the workshop. Limited travel support (sleeper class train fare) to participants from the university sector may be provided. If you would like to participate, please fill up the registration form below and send it to ciao.ncra@ncra.tifr.res.in along with the answers to the following questions:

1. Name:
2. Institution:
3. E-mail address / Telephone no.:
4. Whether a Ph.D. student / post-doctoral / early-career researcher:
5. Have you analysed X-ray data before?
 - If yes, mention the observatory and the nature of data, e.g., which instrument?
 - If yes, what software did you use the most?
6. Have you used CIAO before?
7. What kind of data analysis are you most interested in learning (e.g. source detection in deep-fields, grating analysis of stars, grating analysis of AGNs, imaging spectroscopy of extended sources, etc.)?
8. Would you like to analyse your own Chandra data (if yes please specify Chandra Obs-ID)?
9. Please provide a write-up (in 200 words) explaining why you would like to attend the workshop.

USEFUL LINKS:

An introduction to / Guidelines to install CIAO software

<http://cxc.harvard.edu/ciao/>

Participants may look at all the handouts, viewgraphs, videos, scripts, demos, problem sets, tutorials, etc., made available from the earlier CXC workshops,

<http://cxc.harvard.edu/xrayschool/analysis/index.html>

<http://cxc.harvard.edu/ciao/workshop/previous.html>

<http://cxc.harvard.edu/ciao/guides/youtube.html>

IMPORTANT DATES:

- The last date for receiving the applications is 20 August 2017.
- Selected participants will be informed by 31 August 2017.

Details of the programme will be sent to selected participants and posted on the workshop website at

<http://www.ncra.tifr.res.in>

The workshop will have both instructional talks as well as hands-on practice sessions. The draft program includes:

TALKS:

Introductory talks on X-ray Data Analysis

Calibration and aspect issues related to data analysis

ASPECT ISSUES:

Beginner CIAO talks and demos

Introduction to ds9

Introduction to Sherpa

Advanced sessions on specific topics, e.g. source detection in deep-fields, grating analysis of stars and AGNs, extended source analysis, etc.

HANDS-ON SESSIONS:

Participants are required to bring their own laptop with the latest CIAO installed to gain hand-on experience using CIAO on Chandra data.

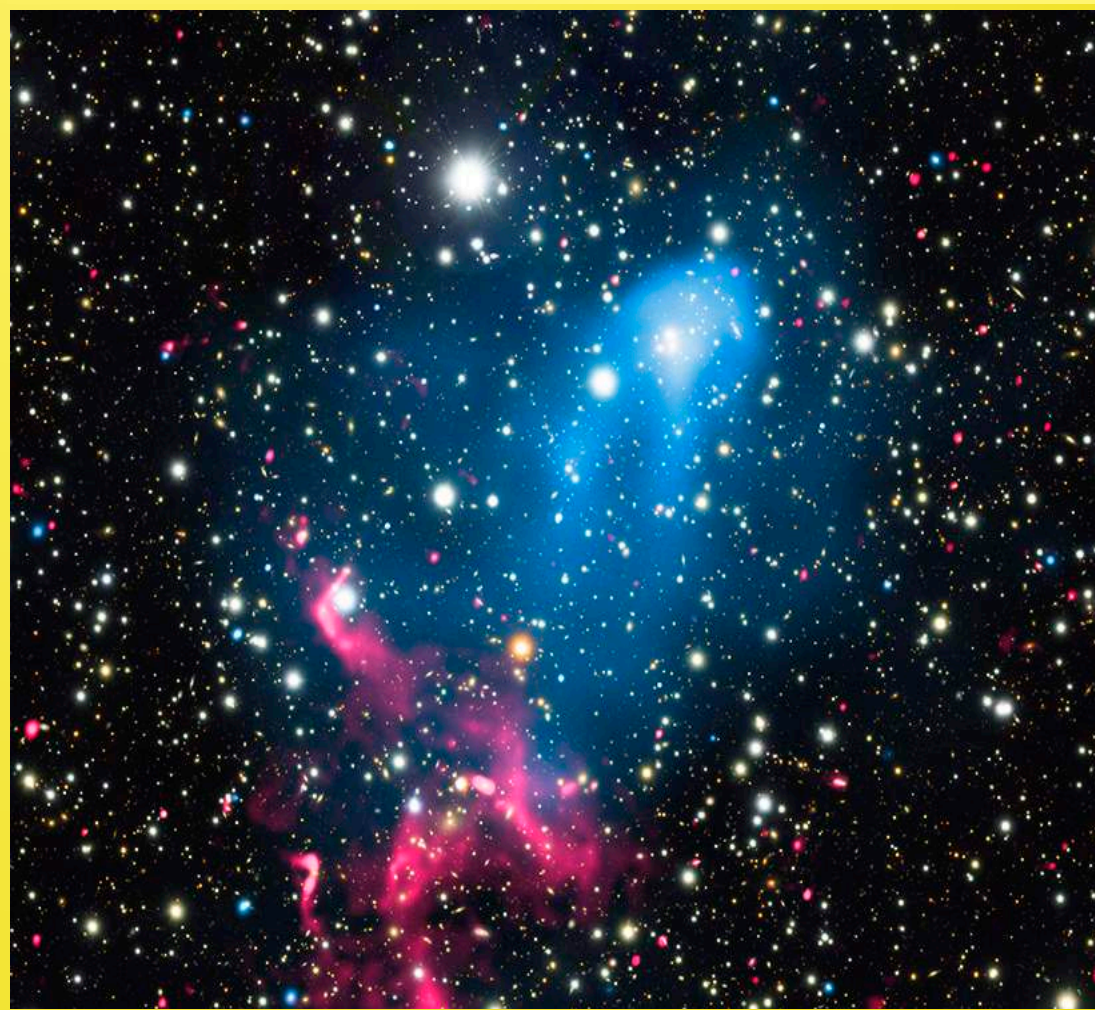
- Sample Chandra data sets will be provided for attendees.

- CIAO team will assist attendees who wish to use their own Chandra data sets.

- Members of the CIAO team will solve problems, if any.

CIAO SUPPORTED PLATFORMS:

Linux 64 bit, Mac OS X 64 bit and X11 System Libraries.



Abell 3411 & 3412: A pair of colliding galaxy clusters ~2,000,000,000 light years away. Image credit: X-ray: NASA/CXC/SAO/R. van Weeren et al; Optical: NAOJ/Subaru; Radio: NCRA/TIFR/GMRT