Program

Sunday 27 June

16:00 -- 19:00: Registration, trouble-shooting/testing software installations, borrel (drinks/snacks)

Location: Pipa's Bar, Eden Hotel on the Amstel (see Venue and Accommodation Page), *not* Eden Lancaster where students are staying!!

Monday 28 June -- Setup and Radio Astronomy

9:30: Welcome

10:00 -- 11:30: Final trouble-shooting/testing software installations, data downloading + coffee

11:30 -- 12:45: Fundamentals of radio astronomy (J. Miller-Jones)

12:45 -- 14:00: Lunch

14:00 -- 15:45: Arrays, Data Packages & Format (A. Richards & D. Petry)

- Data, Packages, Formats
- CASA (talk by A. Richards) / CASA intro (talk D. Petry would have given)

15:45 -- 16:15: Coffee break

16:15 -- 18:00: Hands on: Editing and Calibration (A. Richards)

Tuesday 29 June -- Radio Astronomy

9:30 -- 11:00: Imaging (K. Blundell)

11:00 -- 11:30: Coffee break

11:30 -- 12:45: Hands on: Imaging (K. Blundell)

12:45 -- 14:15: Lunch

14:15 -- 16:00: Hands on: Spectral lines (J. Miller-Jones)

16:00 -- 16:30: Coffee break

16:30 -- 18:00: Hands on: Polarization (A. Richards)

Wednesday 30 June -- Radio Astronomy

9:30 -- 10:15: VLBI (M. Ribo)

10:15 -- 11:00: Hands on: Introduction to AIPS (A. Richards)

11:00 -- 11:30: Coffee break

11:30 -- 12:45: Hands on: VLBI calibration (M. Ribo)

12:45 -- 14:15: Lunch

14:15 -- 16:00: Hands on: Scripting in CASA (D. Petry)

16:00 -- 16:30: Coffee break

16:30 -- 18:00: Hands on: CASA simulations (D. Petry & A. Richards)

Thursday 1 July -- Radio Astronomy

9:30 -- 11:00: Low Frequency Radio Astronomy & Wide-field imaging (J. Miller-Jones) and LOFAR (M. Wise)

11:00 -- 11:30: Coffee break

11:30 -- 12:45: Hands on: Advanced imaging: EVLA (J. Miller-Jones)

12:45 -- 14:15: Lunch

14:15 -- 16:00: Hands on: Completing basic practice or more advanced problems (all)

16:00 -- 16:30: Coffee break

16:30 -- 18:00: Hands on: Continued (all)

Friday 2 July -- Fundamentals of X-ray

9:30 -- 11:00: Intro to X-ray Astronomy and X-ray Detectors (J. Wilms)

11:00 -- 11:30: Coffee break

11:30 -- 12:45: Basics of X-ray Spectra (M. Nowak)

12:45 -- 14:15: Lunch

14:15 -- 16:00: Hands On: Loading, Visualizing & Fitting X-ray Data (M. Nowak & T. di Salvo)

16:00 -- 16:30: Coffee break

16:30 -- 18:00: Hands On: Continued

Monday 5 July -- X-ray imaging/spectra/spectroscopy

9:30 -- 11:00: Introduction to Probability & Statistics (B. Kelly)

11:00 -- 11:30: Coffee break

11:30 -- 12:15: X-ray Spectral Fitting & Error Analysis (M. Nowak)

12:15 -- 13:45: Lunch

13:45 -- 15:30: Hands on: X-ray spectral fitting/errors (all)

15:30 -- 16:00: Coffee break

16:00 -- 17:15: How to write a good proposal (J. Wilms)

17:15 -- 18:00: Hands on: Fitting in Isis/Xspec + statistics

Tuesday 6 July -- X-ray imaging/spectra/spectroscopy + timing

9:15 -- 10:15: Advanced issues in statistics (B. Kelly)

10:15 -- 10:45: Coffee break

10:45 -- 12:00: Hands on: High-resolution spectra (M. Nowak)

12:00 -- 13:30: Lunch

13:30 -- 15:00: X-ray Imaging (M. Wise) + hands on (imaging + high res)

15:00 -- 15:30: Coffee break

15:30 -- 16:30: More hands on: High-res (Nowak, Wilms & Kelly)

16:30 -- 18:00: Fourier Techniques in X-Ray Timing (M. van der Klis)

Wednesday 7 July -- X-ray Timing

9:30 -- 11:00: Hands on: X-ray timing (T. Belloni)

11:00 -- 11:30: Coffee break

11:30 -- 12:45: Hands on: X-ray timing (T. Belloni)

12:45 -- 14:15: Lunch

14:15 -- 16:00: Hands on: X-ray timing

16:00 -- 16:30: Coffee break

16:30 -- 17:15 Timing analysis of AGN light curves: practicalities, problems and solutions (I. Papadakis)

17:15 -- 18:15: "Demystifying" the postdoc application process (S. Markoff)

19:00: Banquet @ Odessa

Thursday 8 July -- GeV Gamma-rays with Fermi

9:30 -- 11:00: Introduction to Fermi Data Analysis (J. McEnery)

11:00 -- 11:30: Coffee break

11:30 -- 12:45: Hands on: Fermi

12:45 -- 14:15: Lunch

14:15 -- 16:00: Hands on: Fermi - LAT Likelihood Analysis I

16:00 -- 16:30: Coffee break

16:30 -- 17:30: Hands on: Fermi - LAT Likelihood Analysis II

17:30 -- 18:15: How to give a good talk (Tomaso Belloni)

Friday 9 July -- Multiwavelength SEDs + Ending

9:30 -- 11:00: Handling multiwavelength data and modeling (S. Markoff)

11:00 -- 11:30: Coffee break

11:30 -- 12:45: Hands on: MW (Markoff, Nowak, Wilms)

12:45 -- 14:15: Lunch

14:15 -- 16:00: Final general hands on, time for more questions and discussions (all)

16:00 -- 16:30: Close + Evaluation

Course Materials

- June 28:
- wget script for radio data downloads (You will still need to download scripts or use the web pages (since these may be updated, it is best to get the latest version when you need it).
- CASA Test script and link to data; AIPS Test script and link to data
- Instructions and data (MERLIN 3C277.1) for calibration, imaging and polarization sessions (continuing on June 29)

- June 29:
- Scripts and data for spectral line calibration and imaging (EVLA IRC+10216, external links to CASA guides @ NRAO)

- June 30:
- Combining MERLIN EVN data (Markarian 3C273)
- VLBI data reduction (EVN J0916+3854) and data from links therein or from wget script above

- Data for scripting in CASA
- Data for simulations in CASA (High-redshift CO) and Simulations script

- July 1:
- EVLA continuum (3C391, external link to CASA guides @ NRAO)
- Optional additional examples:
- see CASA Guides , especially Flanking Fields (VLA NGC 3079; link in script for downloading data from VLA Archive)

- ATCA data (J2342-44) and tutorial (making an HI cube)

- July 2: Information and data for hands-on-sessions (X-ray Spectroscopy, Part I)
- *The Above Link Contains Instructions for Testing Your X-ray Spectroscopy Software Setup*

- July 5: Information and data for hands-on-sessions (X-ray Spectroscopy, Part II)
- July 6: Information and data for hands-on-sessions (High Res Spectra, X-ray Imaging, Statistics)
- July 7: Information and data for hands-on-sessions (X-ray timing)
- July 8: Information and data for hands-on-sessions (Fermi)
- July 9: Information and data for hands-on-sessions (Multiwavelength SEDs)

For software installation please refer to the software installation pages .
For an ISIS introduction see J. Wilms' lecture on X-ray astronomy .