Population of the XMM-Newton Image Gallery

Rosie Willatt

Supervisor: Dr Matthias Ehle

(YGT, Start Date: July 17th 2006)

Presentation Contents

- Project Aims

- Introduction to XMM EPIC Cameras
  -MOS1, MOS2 and PN

- Introduction to the gallery
  -Population procedure
  -Example images

- Future work as a YGT
  - Development of software within SAS
  - Use of Photoshop

Project Aims

- Develop a procedure within the Science Analysis System (SAS) to generate images from the XMM public archive data

- Populate the XMM Image Gallery with these images

- Introduce the use of Photoshop to improve image presentation

XMM-Newton EPIC Cameras

- ## MOS1 and MOS2
  -energy range: 0.2 to 10 keV
  -7 CCDs
  -2 MOS cameras rotated
    by 90° to each other

- ## PN
  -Quantum Efficiency
    >90% from 0.3 to 10 keV
  -12 CCDs
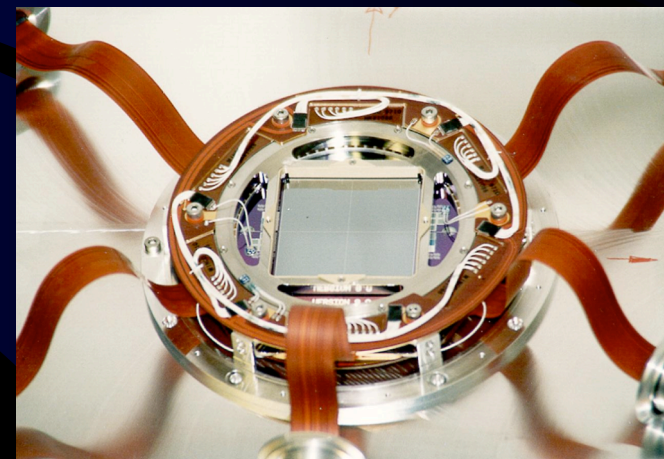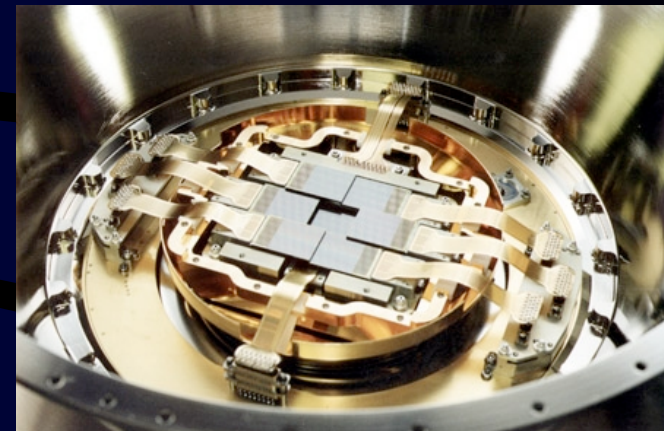
XMM-Newton Image Gallery

- Purpose: to provide scientifically useful and attractive images and spectra for scientists and the general public

- Current population: submission of images produced by scientists

Examples of Images
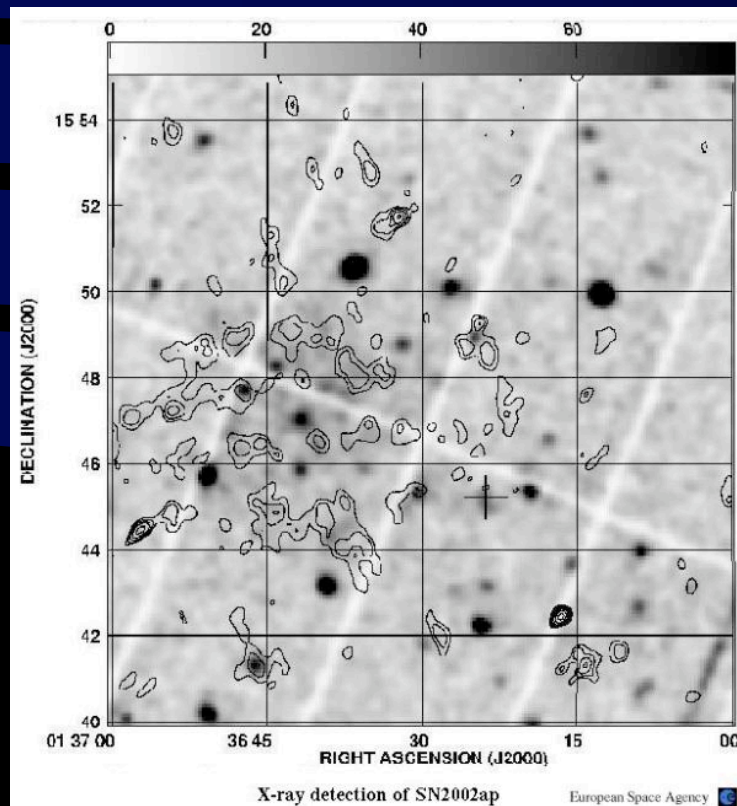
SN2002ap in M74
(EPIC-PN only)

Neutron star RX J0720.4-3125
(all EPIC instruments)

Red: 0.2-1.0 keV
Green: 1.0-2.0 keV
Blue: 2.0-4.5 keV

Image courtesy of F.K. Sutaria, The Open
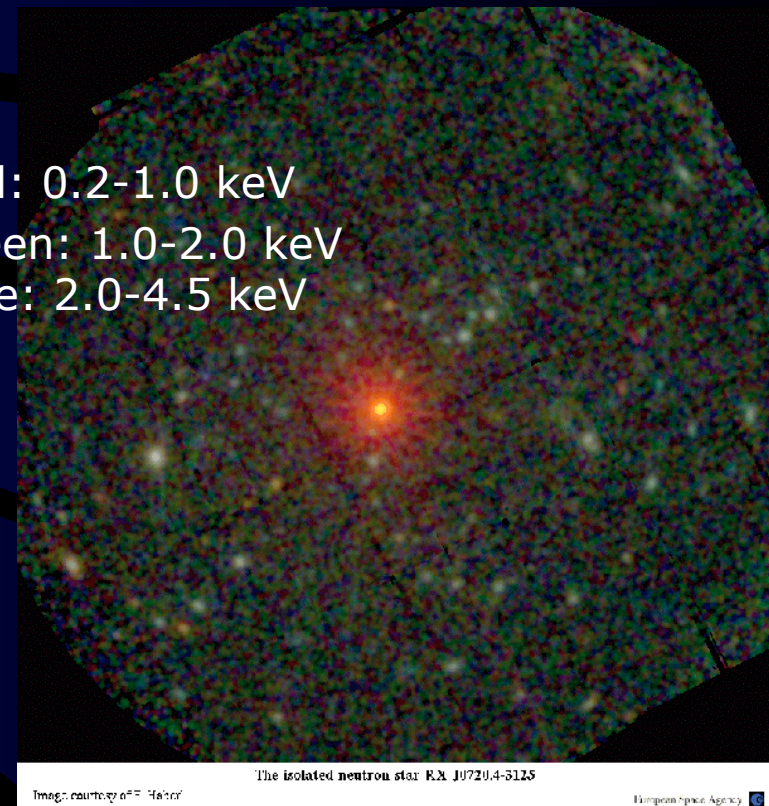University, Milton Keynes and ESA

Image courtesy of F. Haberl and ESA

Examples of Images
Lockman Hole (all EPIC Instruments)

Red: 0.5-2.0 keV
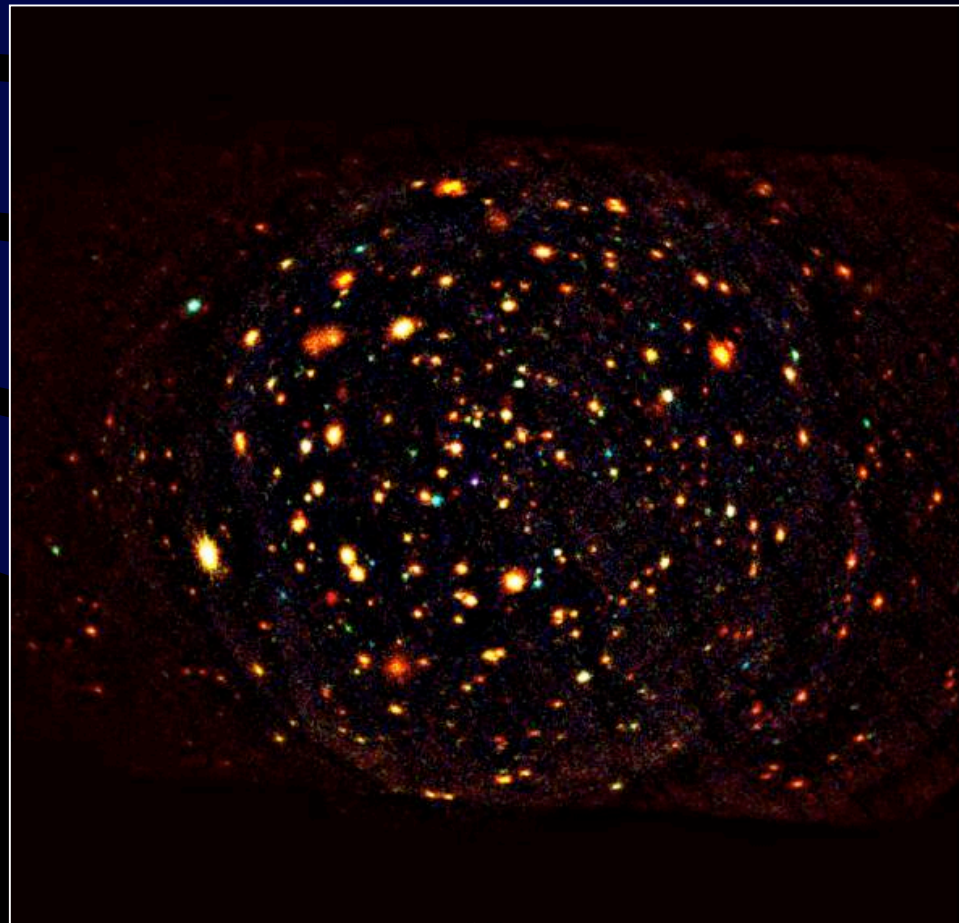Green: 2.0-4.5 keV
Blue: 4.5-10 keV

Image courtesy of G. Hasinger, MPE Garching, Germany and ESA

Future Work as a YGT

- Develop an analysis package within SAS

- Utilising package for population of the XMM-Newton Image gallery

- Use of Photoshop in enhancing presentation

- In particular: overlay of MOS and PN data and false colouring by energy band