Starlink

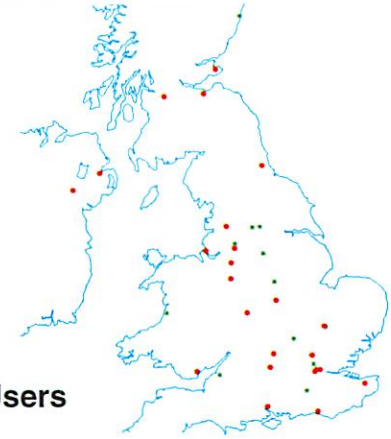
Starlink Project

Set up in 1980 by the Science & Engineering Research Council, Starlink is a:

* ***network of computers*** *used by UK astronomers.*
* ***collection of programs*** *to calibrate & analyse astronomical data.*
* ***team of people*** *to give hardware, software & administrative support.*

Sites

There are 25 main Starlink Sites, plus several Remote User Groups. Their locations are shown below.



Users

Starlink has over 1600 users. The graph below shows the growth since 1986. Each colour represents the number of users at a specific site.

Contact

Starlink Project, DRAL, Chilton, Didcot, Oxon, OX11 0QX, UK.

Tel: +44-235-445518
e-mail: *ussc@star.rl.ac.uk*

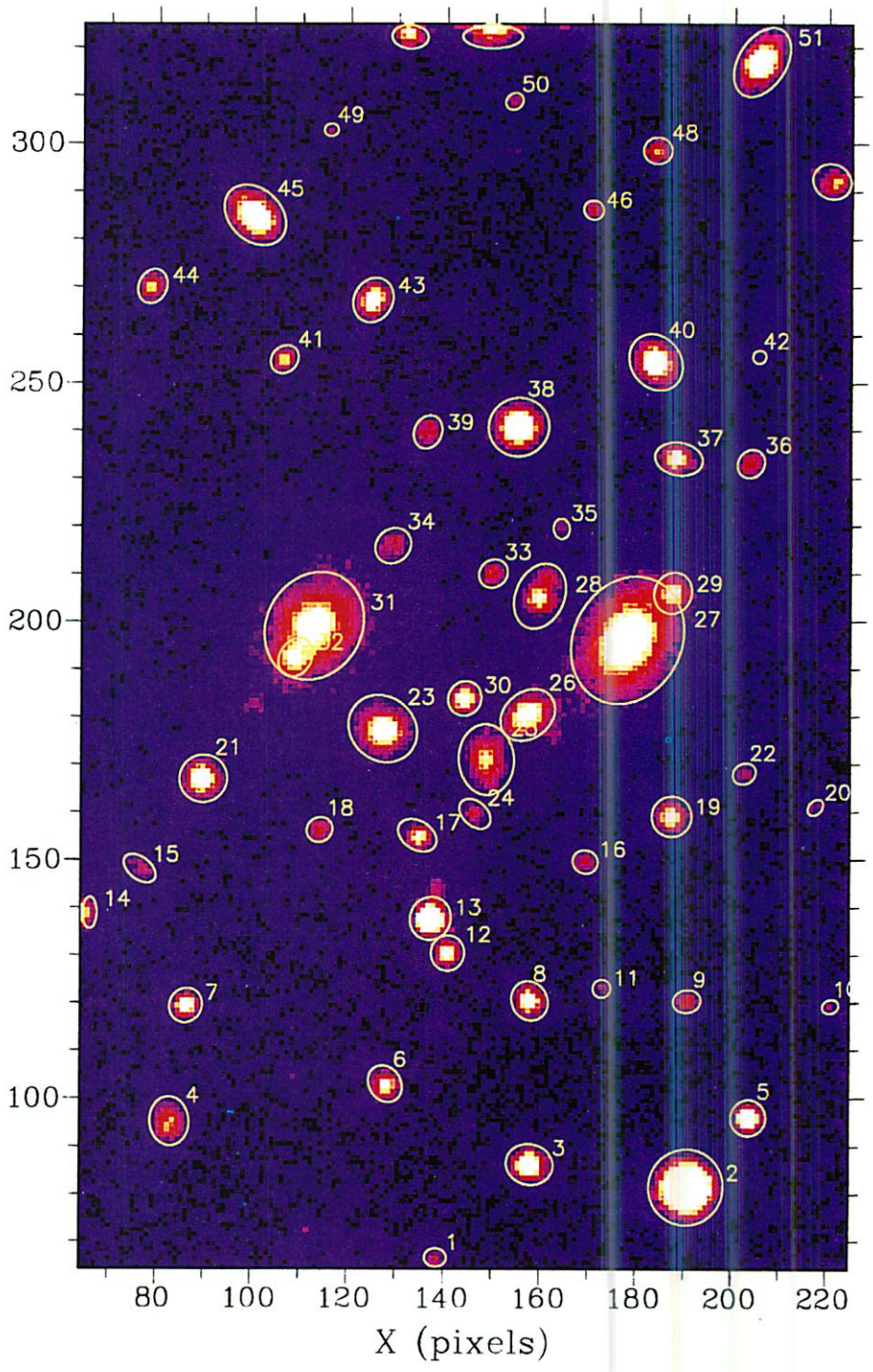
Hardware

Originally based on VAX/VMS computers, Starlink is changing over to Unix-based systems. This process should be completed by the end of 1995.

Keeping in touch

Starlink produces a newsletter twice a year. If you would like a copy, write to the contact address below, or send an e-mail message to *mdl@star.rl.ac.uk.*

Position, Intensity & Shape Analysis



PISA is one of the Starlink software application packages. It locates, parameterises and deblends objects on a frame. This example shows object finding performed on a galaxy cluster (0637-53). Note the object deblending in the central regions.

Starlink Software

The **Starlink Software Collection** includes about 20 major packages covering a wide range of astronomical data reduction and analysis techniques.

At the core of most of these packages is a common **software environment** which provides many of the functions which applications need, and offers standardised methods of structuring and accessing data. This simplifies programming and support, and makes it easy to use different packages for different stages of data reduction. Users see a consistent style, and can mix applications without hitting problems with different data formats.

Two examples of the output which can be generated by Starlink application packages are shown opposite and overleaf.

Some of the **application areas** supported by Starlink software include:

* *Spectroscopy*
* *Image processing & Photometry*
* *Astrometry*
* *Time series & Polarimetry*
* *Database management*
* *Specific wavelengths*
* *Specific instruments*
* *Data handling & Format conversion*
* *Observation preparation*
* *Mathematics & Statistics*
* *Graphics*
* *Document preparation*

Support

Starlink's support team is centred on the Project's management group at DRAL's Rutherford Appleton Laboratory near Oxford. This group coordinates software production and distribution, and hardware purchase and maintenance.

There are several Starlink application programmers who are based at Starlink sites, where they are in day-to-day contact with astronomers who use their programs.

Starlink provides a manager at each of its sites to give on-the-spot support to users, and to keep the computers running and the software up-to-date.

Overseas contacts

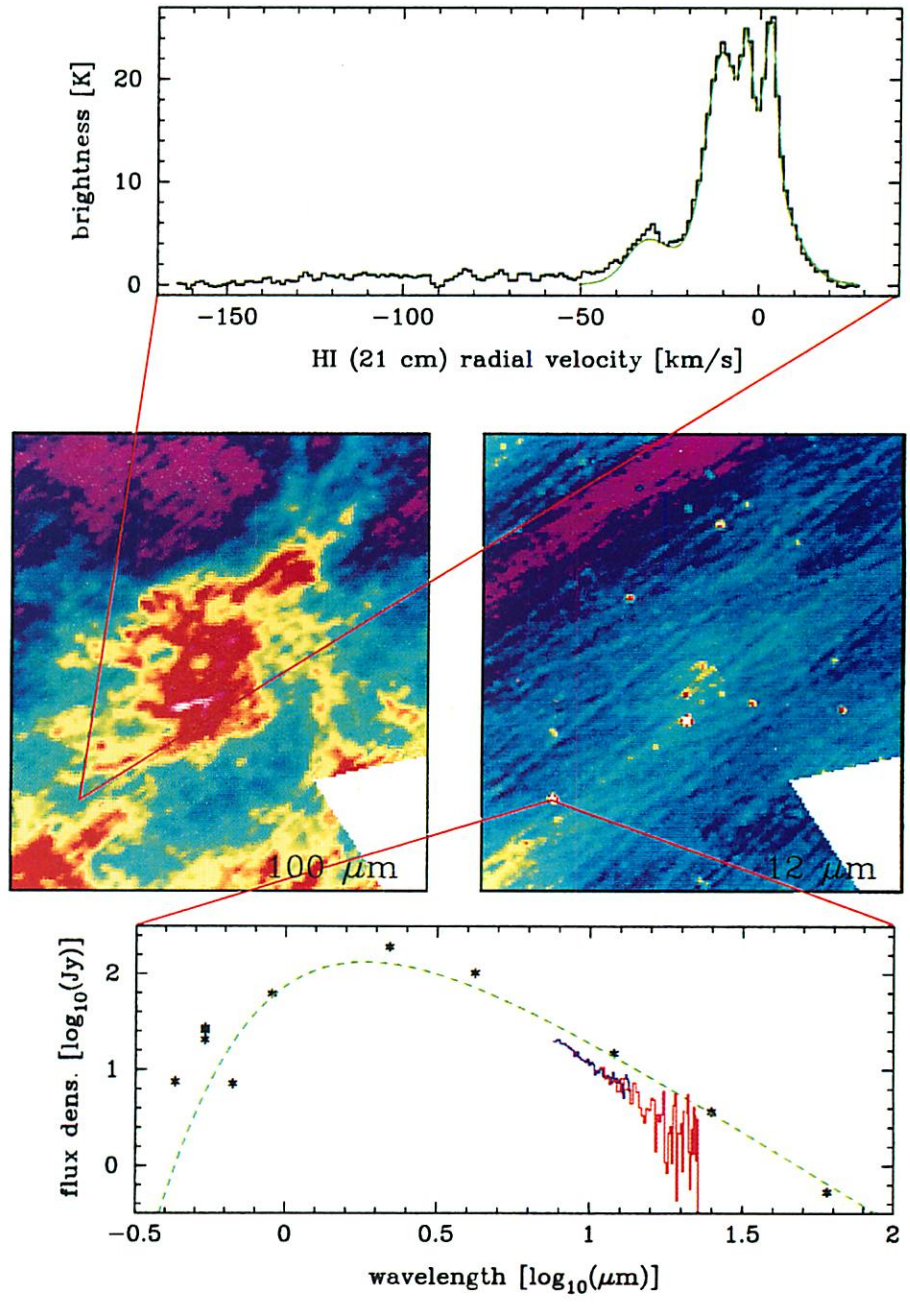
Many sites outside the UK run Starlink software, in particular UK telescope sites, which are Starlink-compatible and managed like Starlink sites.

Software availability

Starlink software is freely available to bona fide astronomers. Information is available on the World Wide Web: URL=*http://star-www.rl.ac.uk/*

Kernel applications & Spectroscopic data reduction

This example illustrates two Starlink applications working together. KAPPA displayed the images shown in colour, and SPECDRE analysed the images and plotted the graphs.



Centre left: *Thermal infrared emission of cold dust in a diffuse interstellar cloud.* ***Centre right:*** *Infrared radiation at 12 micron, mainly red stars and dust envelopes of young stars.* ***Bottom:*** *spectral information gathered from different sources for one of the stars.* ***Top:*** *the interstellar gas at the position of the star. It shows a spectrum of the 21 cm line of neutral atomic hydrogen. The green curve represents a fit to the data, using different Gaussian functions for five spectral lines.*