5.7 Lyon Team (LYO)

Team Leader	Dr. Roland Bacon
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Staff	Name	Degree	Status	%	Work Package
1.	Roland Bacon	PhD	director	10	1.3, 2.7, 2.8, 3.8, 3.11
2.	Emmanuel Pecontal	PhD	astronomer	30	1.4, 2.3, 2.4, 2.7, 3.3
3.	Arlette Rousset-Pecontal	PhD	software eng.	15	2.1, 2.3, 2.7, 3.3
4.	Gilles Adam	PhD	astronomer	30	1.6, 1.7, 2.3, 2.5, 2.7, 3.3, 3.8
5.	Eric Emsellem	PhD	astronomer	30	1.3, 2.3, 2.7, 2.8 3.3
6.	Pierre Ferruit	PhD	astronomer	30	1.1, 1.7, 2.3, 2.5, 2.7, 3.3, 3.8

Local team description :

The Lyon team, based at the site of the Observatoire de Lyon, has originally been formed during the construction of one of the first integral field spectrographs, TIGER. Since then, the team has grown and has been responsible for the construction of two other integral fields spectrographs. The first one, OASIS (see upper figures), was the successor of TIGER and is in common use at the Canada-France-Hawaii telescope. The second one, SAURON, is collaborative project between LYO, LEI and DUR and is currently used at the William Hershell telescope. For both instruments, the Lyon team has developed dedicated data reduction software packages with user-friendly interfaces (see bottom figure).

The team is now building another instrument, SNIFS (collaborative project between French groups and the University of California at Berkeley), which will be used to study the physics of supernovae of type Ia and their use as cosmological probes. It is also an active member of the IFMOS European consortium (lead by MAR and including DUR, ESO, IAC, LEI and MPE) conducting one of the preliminary studies for the future near-infrared spectrograph of the Next Generation Space Telescope (funded by NASA, ESA and CSA).

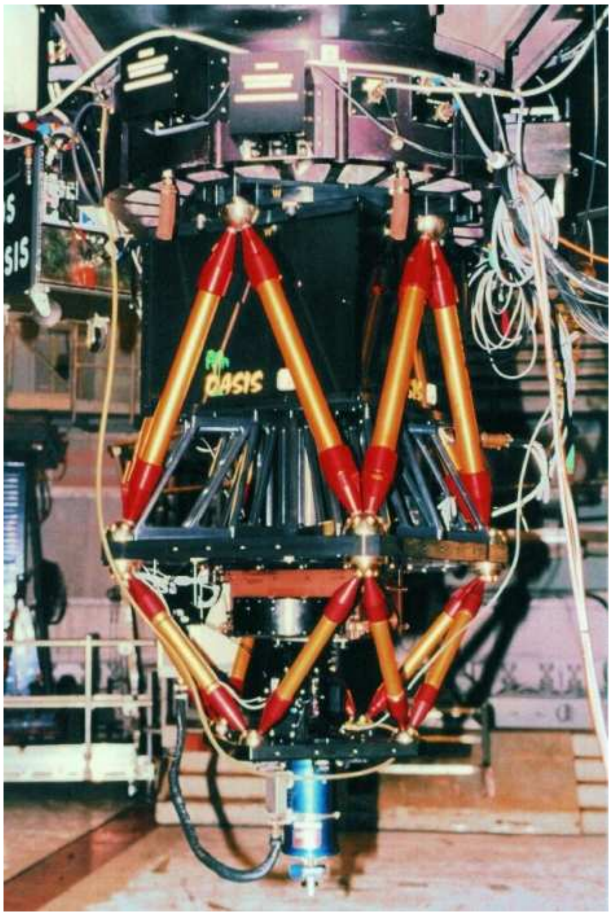
The major research fields of the LYO team are: the dynamics of nuclear regions of galaxies (stars & gas); the energy budget of the extended emission-line regions of nearby Active Galactic Nuclei (AGN); the study of nearby and distant radiogalaxies and quasars; the physics of supernovae of type Ia and their use as cosmological probes. The core of these four scientific fields is composed of observational programmes conducted with 3D instruments developed by the team (see publications).

The LYO team is actively collaborating with members of the Euro3D consortium, both on instrumental and scientific projects. It can bring to the network valuable and unique experience in the realisation of realistic (i.e. physically meaningful and can survive thorough comparison with actual data) and user-friendly (i.e. designed for use by the non-specialist astronomical community) data analysis software for 3D data cubes.

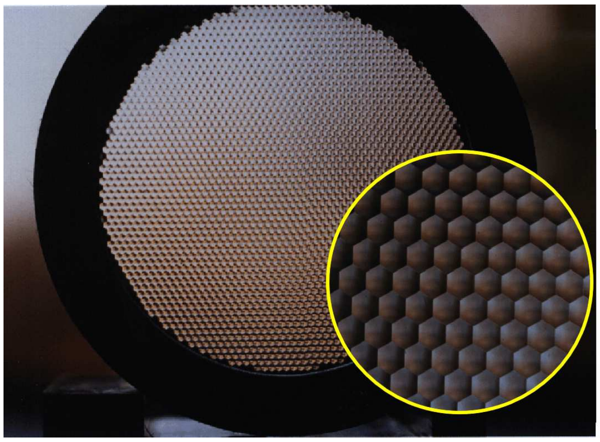
Significant recent publications :

Bacon et al. 2001, *"The M31 double nucleus probed with OASIS and HST. A natural m=1 mode?"*, A&A in press (astroph/0010567)

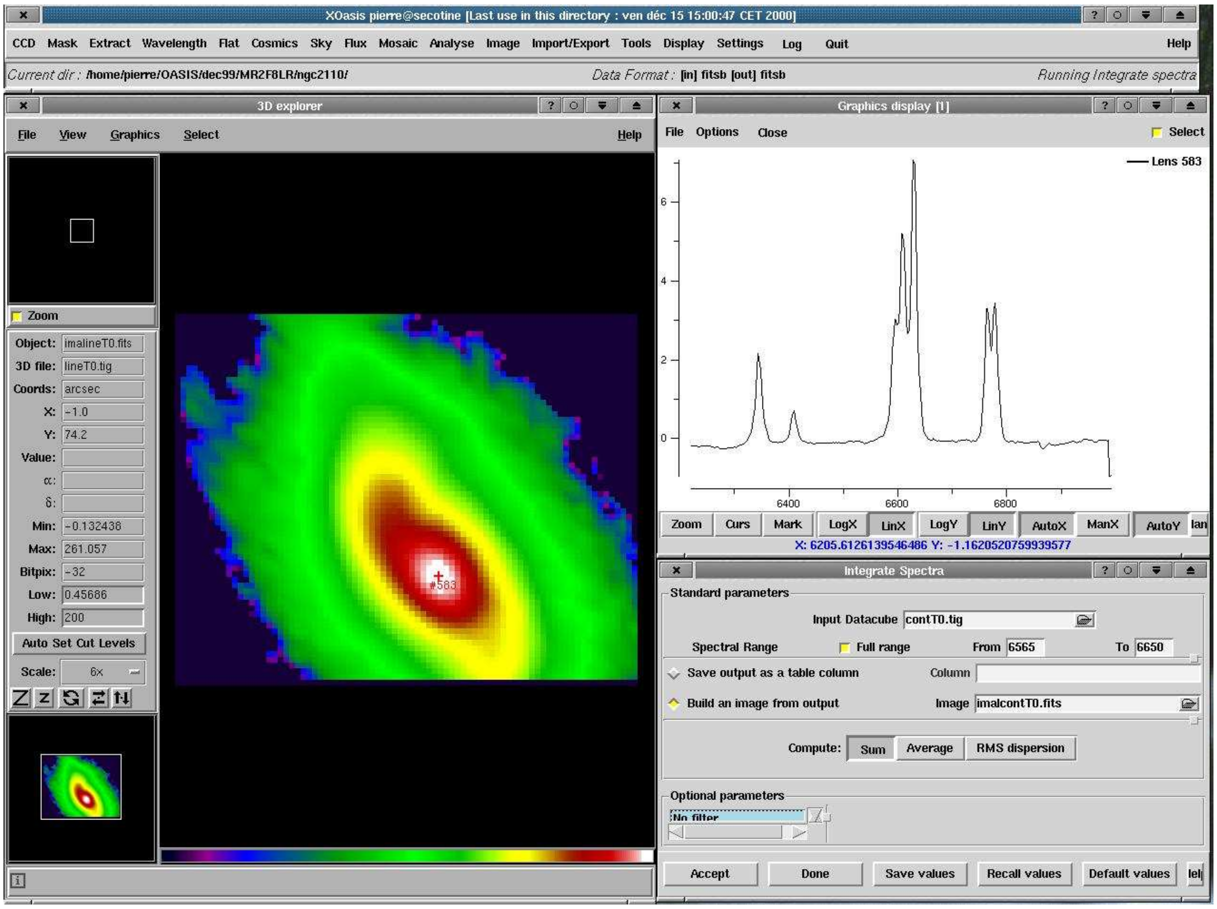
Ferruit et al. 1999, *"The extended emission-line region of the Seyfert galaxy Mrk 573"*, MNRAS, 309, 1



OASIS at CFHT, built by Lyon team



OASIS lens array, designed for operation with adaptive optics system and high spatial resolution



Data cube analysis software tool, written in Lyon