A sort of simple mosaicing

- 2 jittering modes foreseen in observation templates for SPIFFI:
  - User defined jitter (can be used for mosaicing) or automatic jitter
- The reduction pipeline only deals with automatic jittering
  - Random offsets of very small amount to avoid cosmics

Reduction pipeline:

1. Reduce the observation for each pointing to a data cube
2. Allocate a bigger sized data cube (max. double sized in RA, DEC)
3. Adjust the intensities of the single cubes according to their integration times
4. Take the first incoming cube as position reference
5. Align the other data cubes within the big data cube using the FITS-keywords HIERARCH ESO SEQ CUMOFFSETX, Y to sub-pixel accuracy (that means resampling by interpolation)
6. Average the overlapping pixels weighted by the integration times

Real mosaicing is more complex

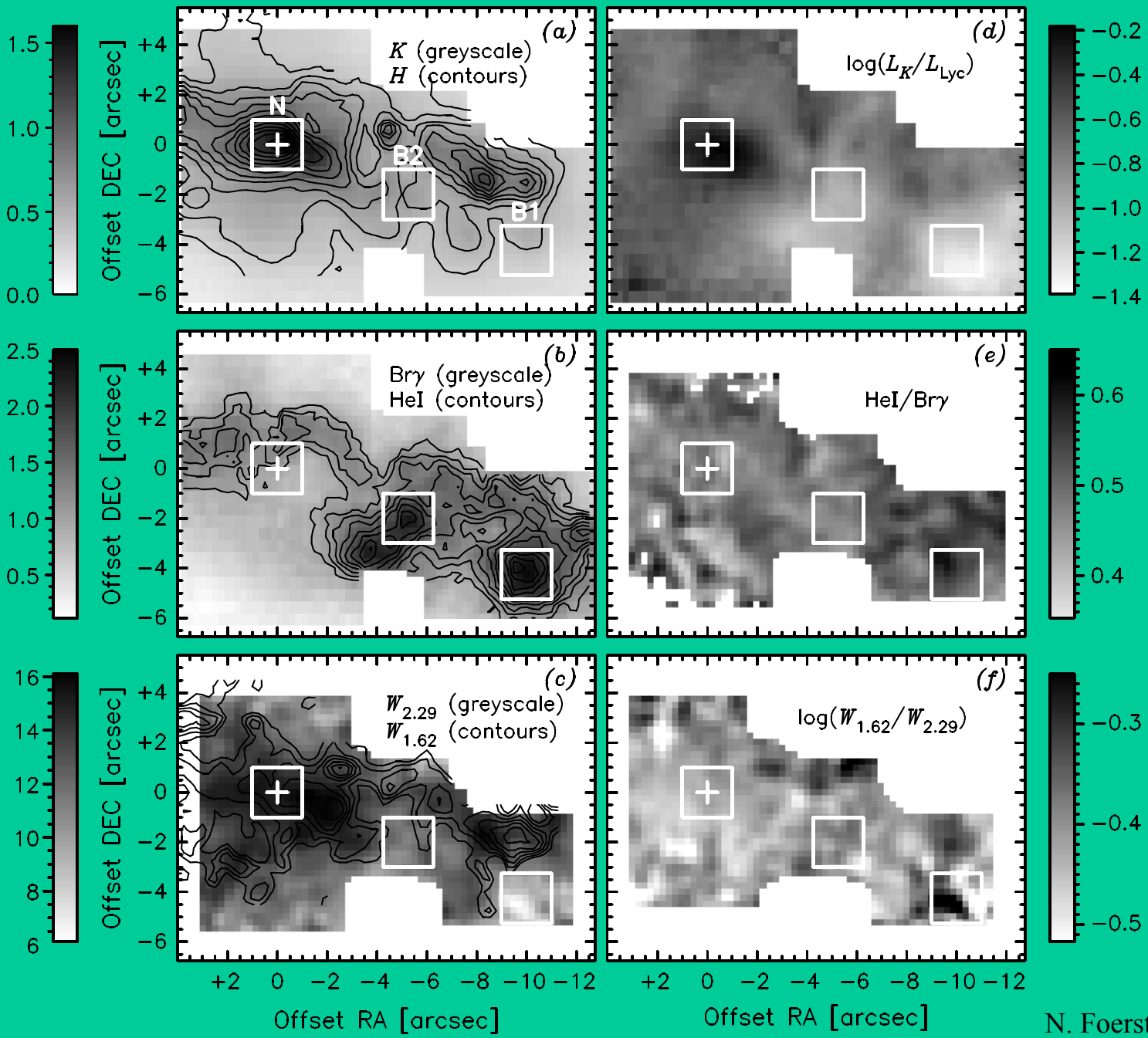
- Accuracy of the pointing position determination
- small overlapping regions => different S/N over the combined exposures
- combination of exposures of different observing nights
- different spatial and/or spectral resolution of the single exposures
- Even combinations of exposures of different 3D instruments

Fields of 3D instruments are usually small

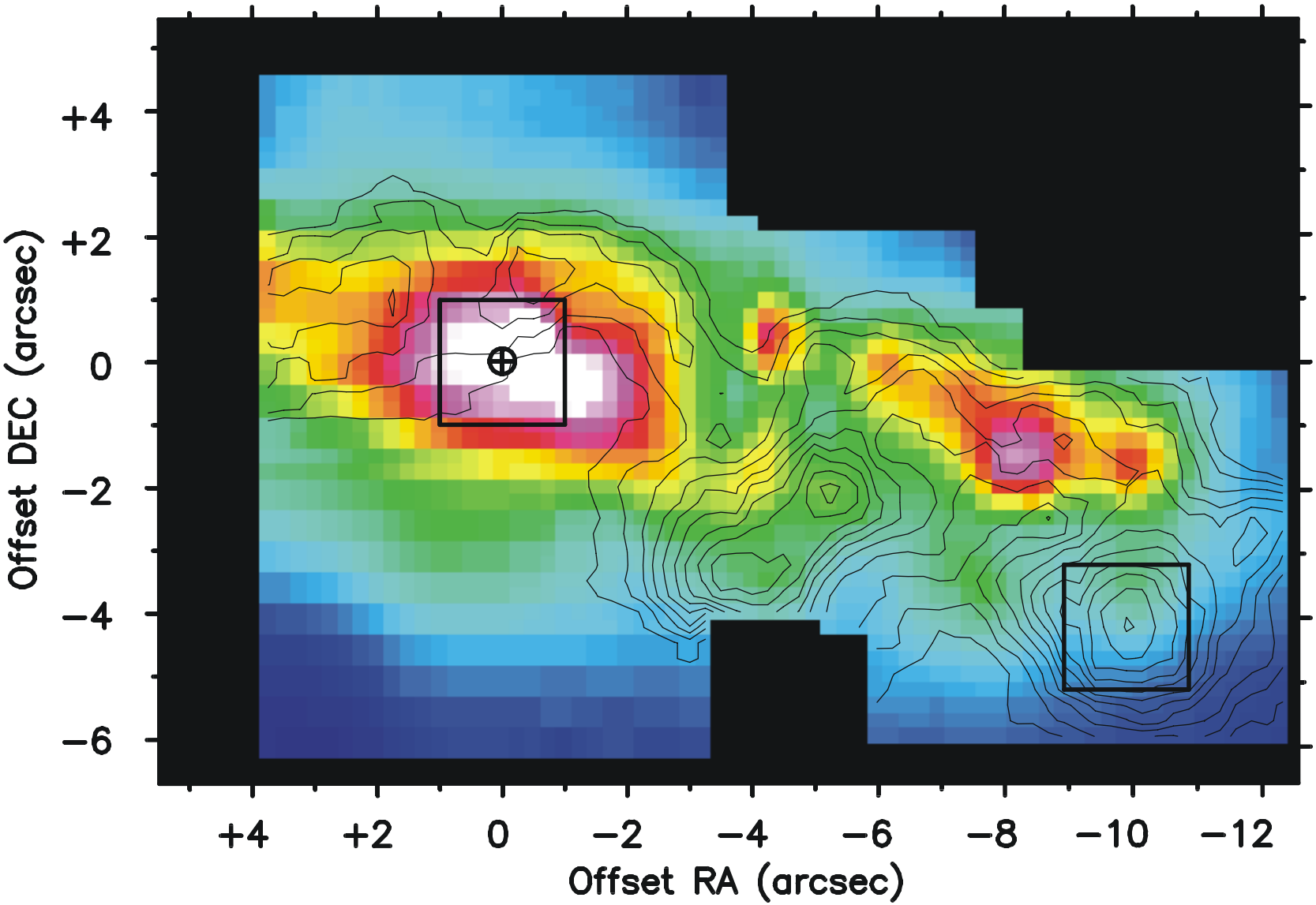
Science Projects that would benefit from mosaicing

- Velocity fields of interacting galaxies
- Velocity fields of nearby galaxies
- Studies of galaxy clusters
- Others?

M82: example from the MPE 3D instrument



N. Foerster-Schreiber, 1998



N. Foerster-Schreiber,

1998

Goals:

- To develop, test and distribute robust 3D mosaicing algorithms and software

Tasks and Sub-Tasks

1. Developing procedures for relative (and absolute) flux scaling of separate Euro3D data structures for proper combination
2. Assessing schemes for suitable data quality flagging of 0-, 1-, 2-, and/or 3-dimensional data subsets
3. Devising methods for arriving at common spatial resolutions, for the case of differing seeing/resolution
4. Obtaining NIR and optical test data
5. Analysing the data, testing methods
6. Writing, debugging, and documenting code
7. Writing User's Guide style documentation
8. Releasing the routines to the Network

Participating Teams

- AIP, CAM, DUR, (ESO), LYO, MIL, MPE

Attaching People to the Tasks

- TBD, based on available expertise within the participating teams, timescales for availability of instrumentation, timescales for RTN hires.

Milestones

- Year 1: Tasks 1, 2, and 3 should be achieved
- Year 2: Tasks 4, 5, and 6
- Year 3: Tasks 7 and 8

Coordination within the RTN sub-groups

•Strong dependency on Task 2.2 (3D Visualization)

•Likely strong synergy with Tasks 1.3 (Normal galaxies) and 1.4 (Active galaxies), as well as with other science projects.

•Of course, strong dependence on Task 2.1 (Software specifications)

Sub-Group Meetings, Mini-Workshops, Secondment

TBD

Status and Availability of Instruments

See instrument talks

Observing strategy

Don't know what is meant in this context.

Data Reduction + Analysis

To be done in Year 2 to a large extent

Publications

At any stage, providing scientific results exist. No need to publish any papers on methodology, except as sections of science papers.