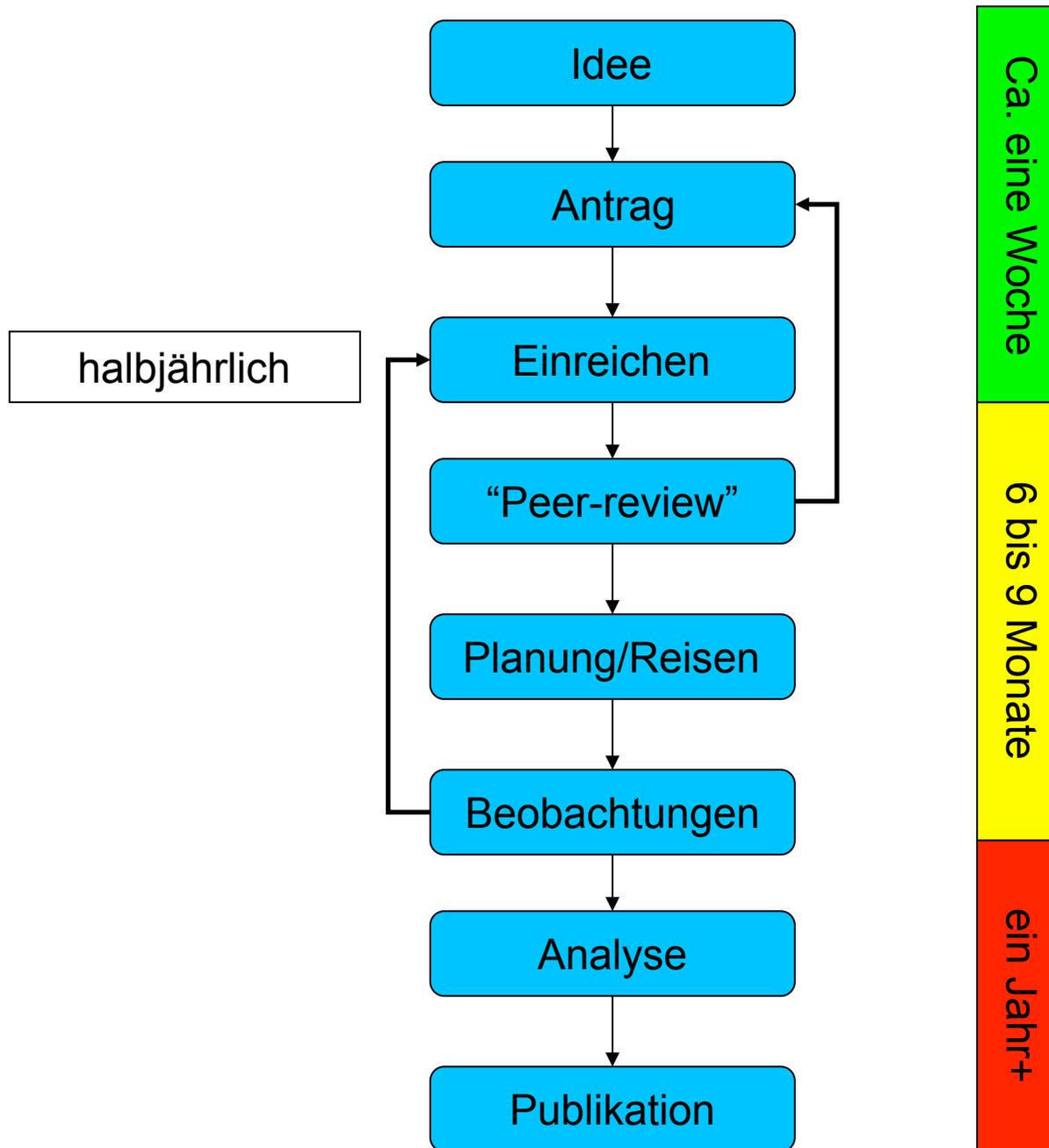


Beobachtungen mit dem ESO/VLT



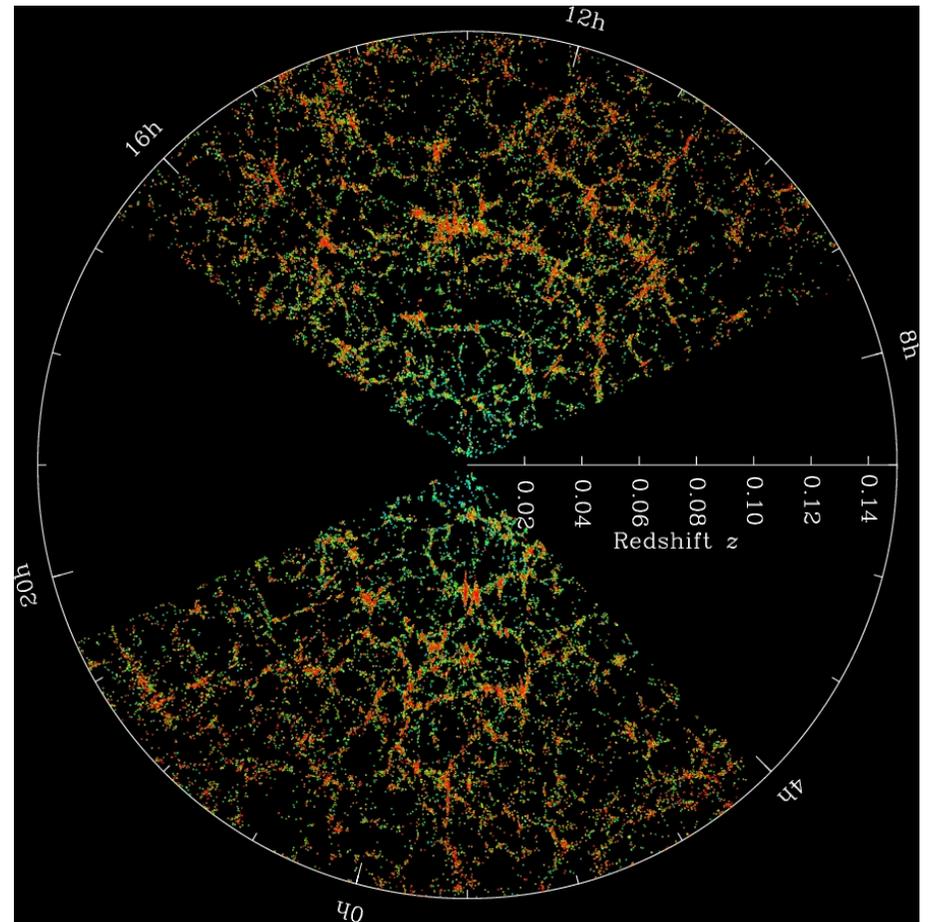
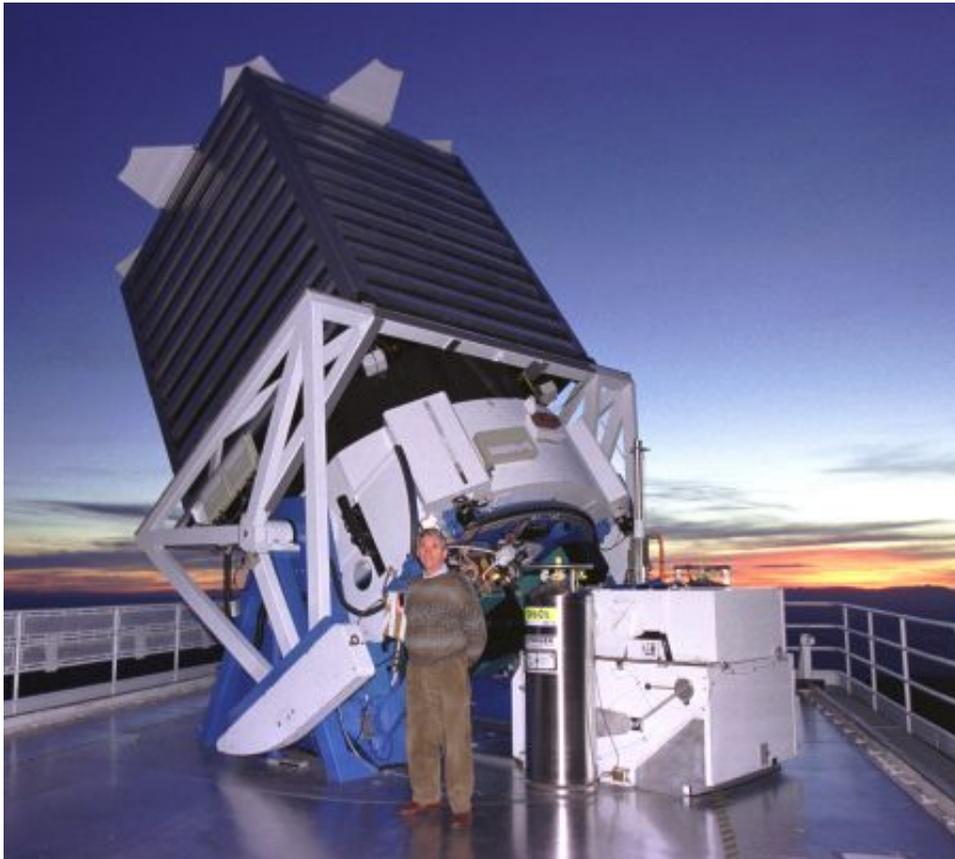
Bilder: www.eso.org/public/images

Typischer Ablauf (time-line)



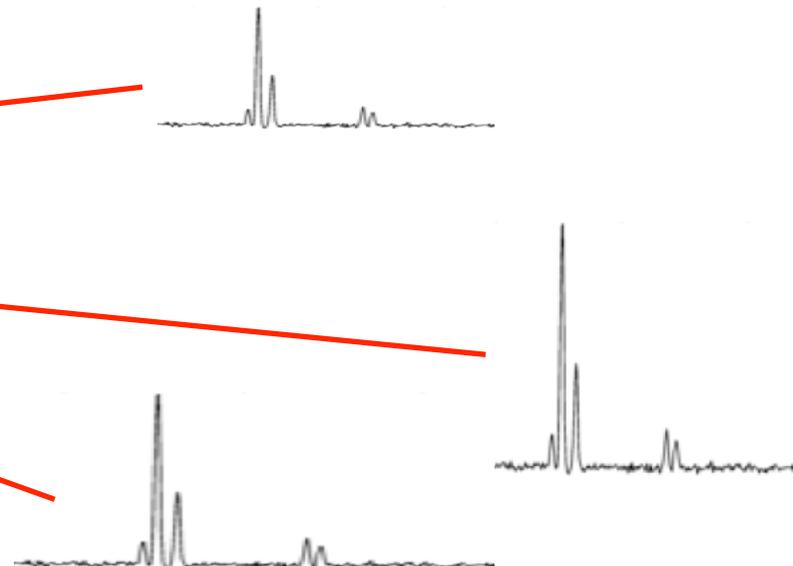
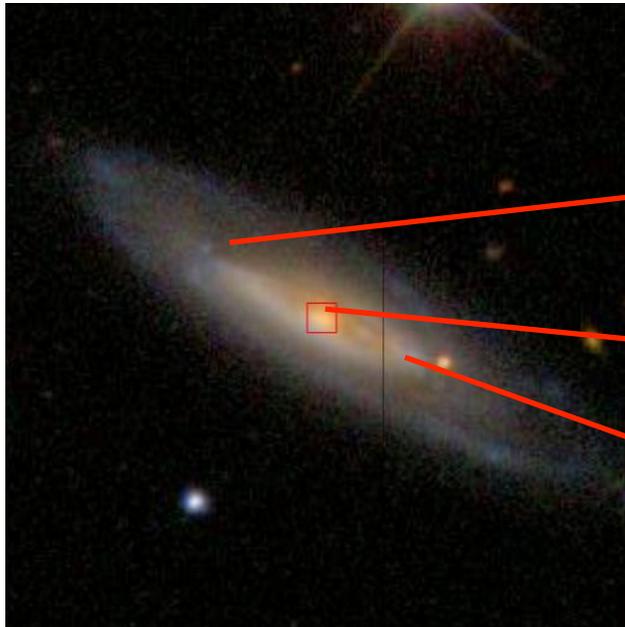
Sloan Digital Sky Survey

www.sdss.org/

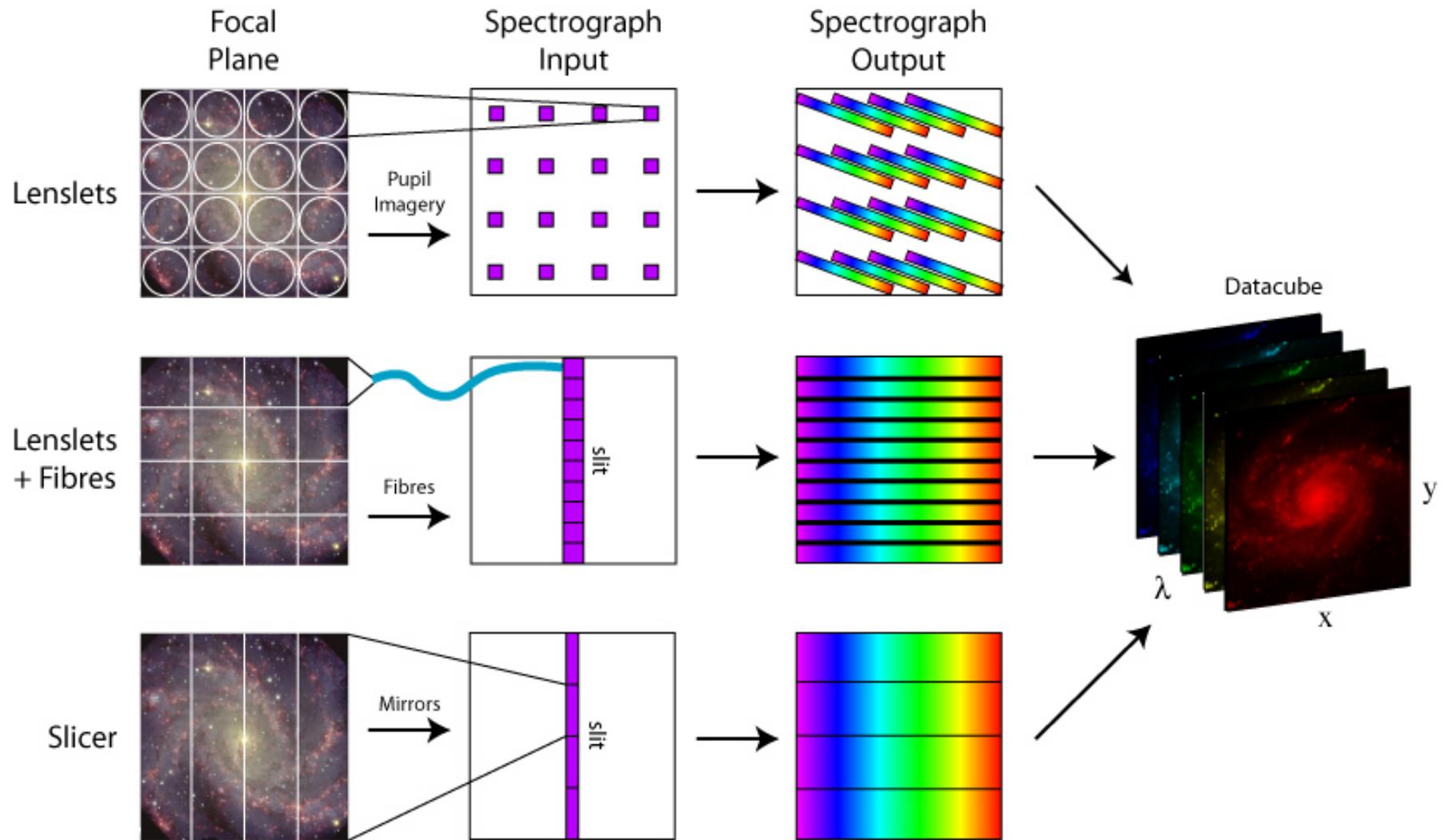


Idee

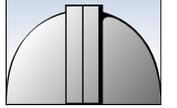
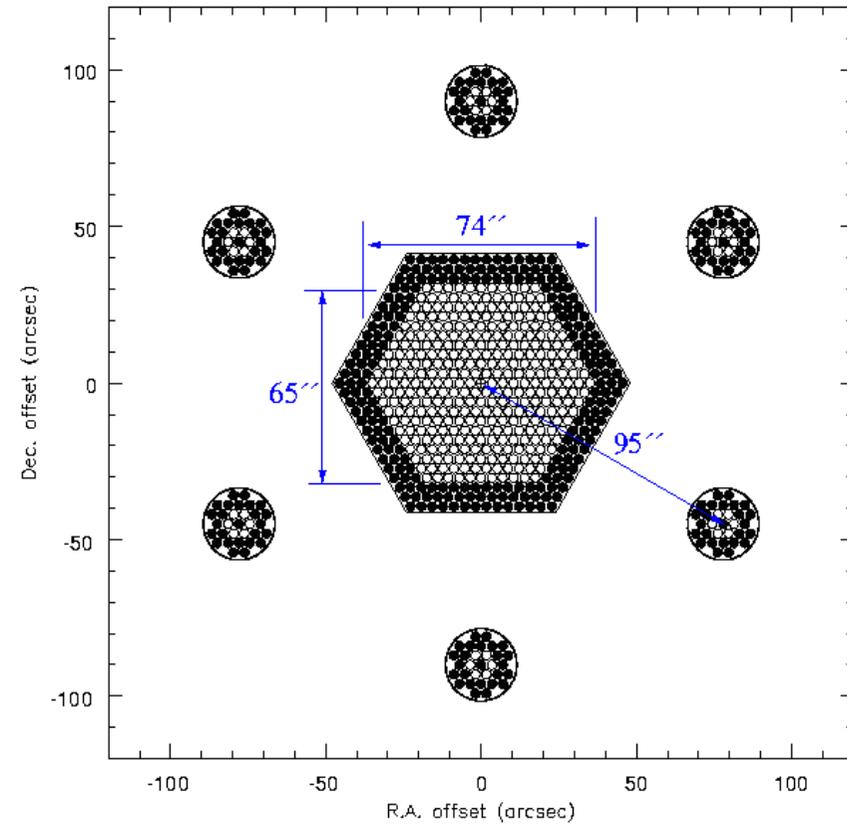
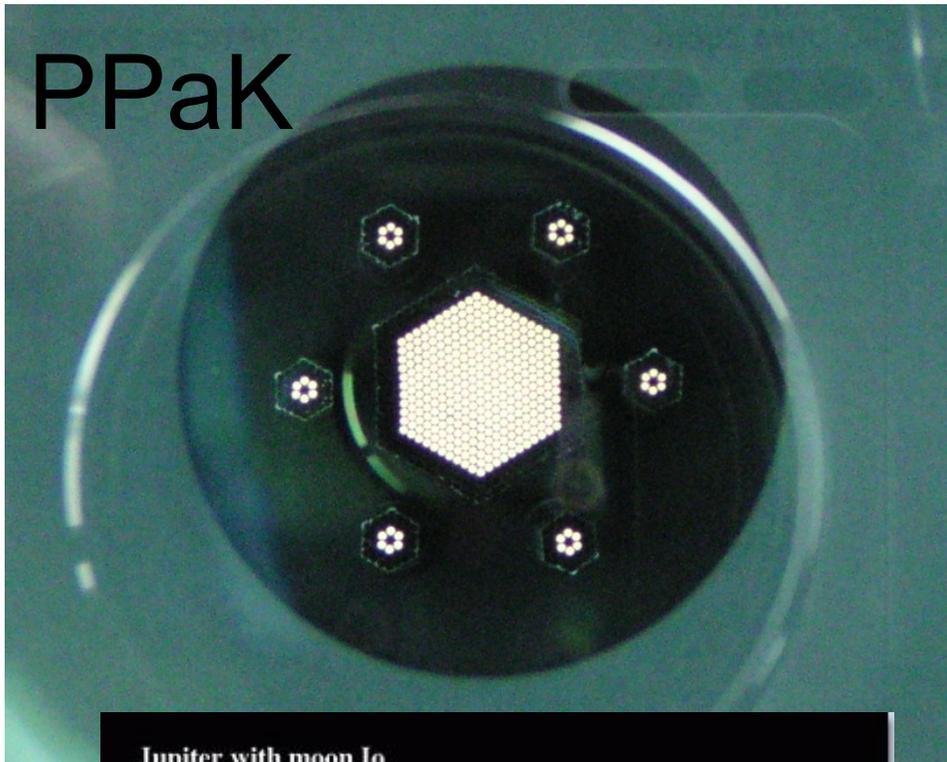
- Nur **ein** Spektrum pro Galaxie in SDSS.
- Damit wird die ganze Galaxie bestimmt.
- Unsere Idee ist es aber, die Galaxien mit Hilfe von **IFS** (1600 Spektren) zu beobachten
⇒ d.h. man bekommt Spektren für jeden Punkt in einer Galaxie.



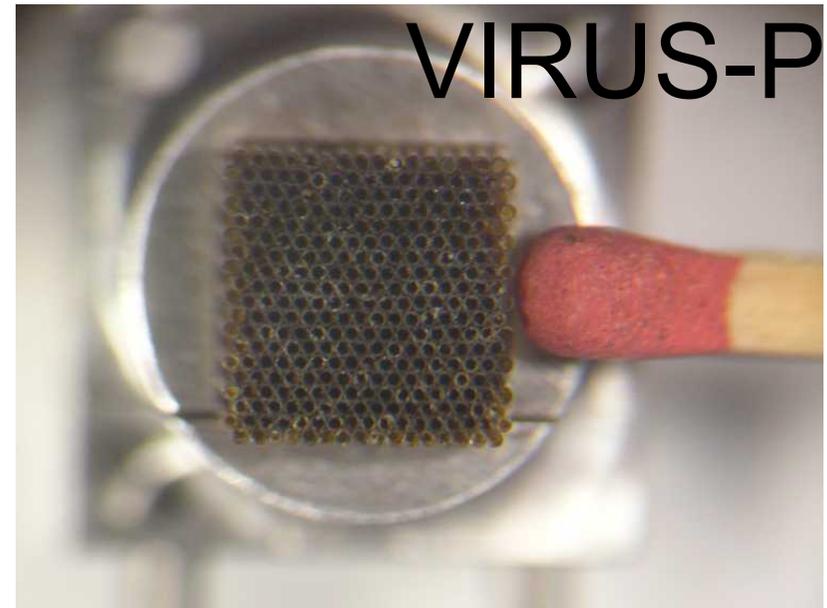
Integral Field Spectroscopy



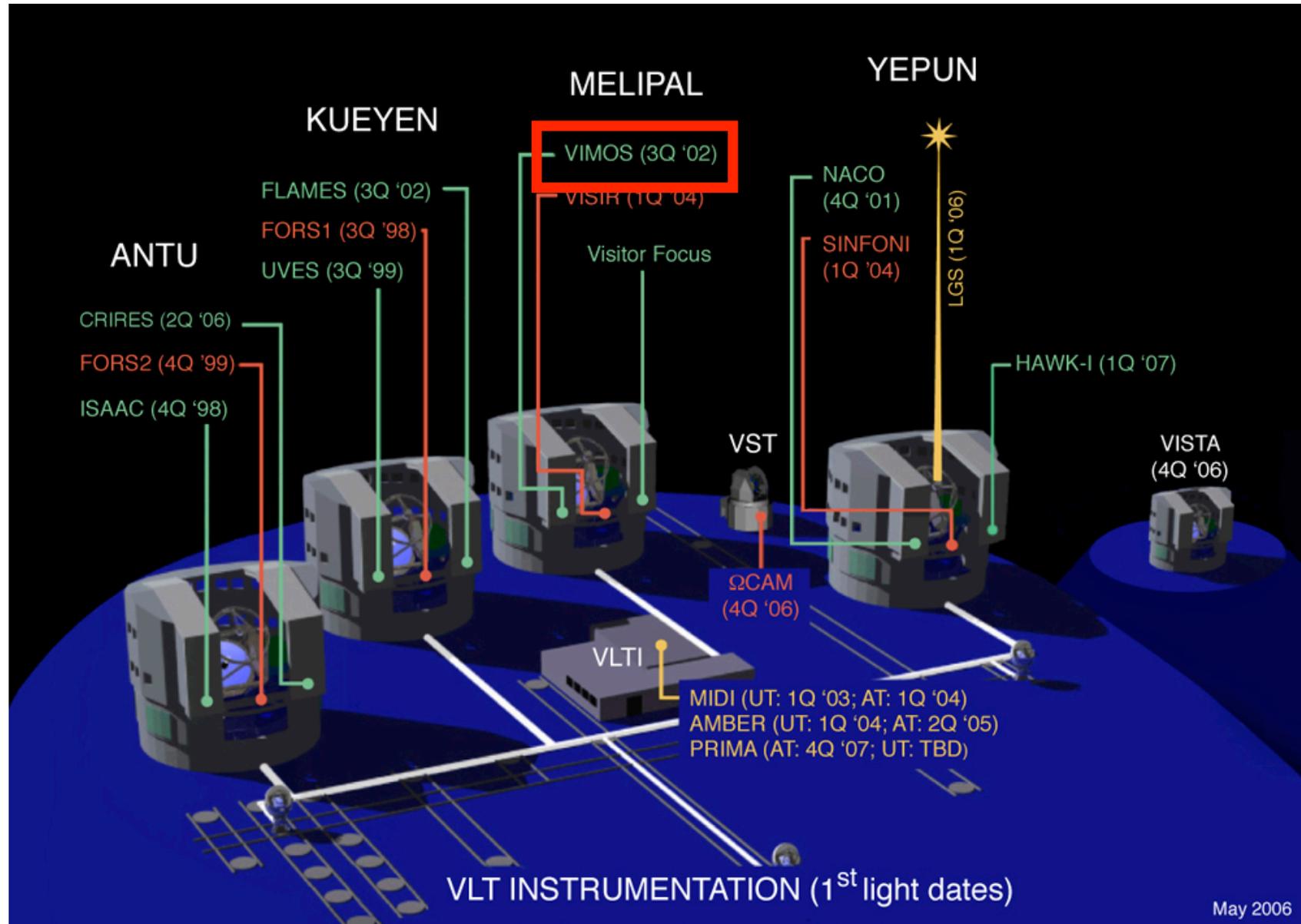
IFS Beispiele



AIP



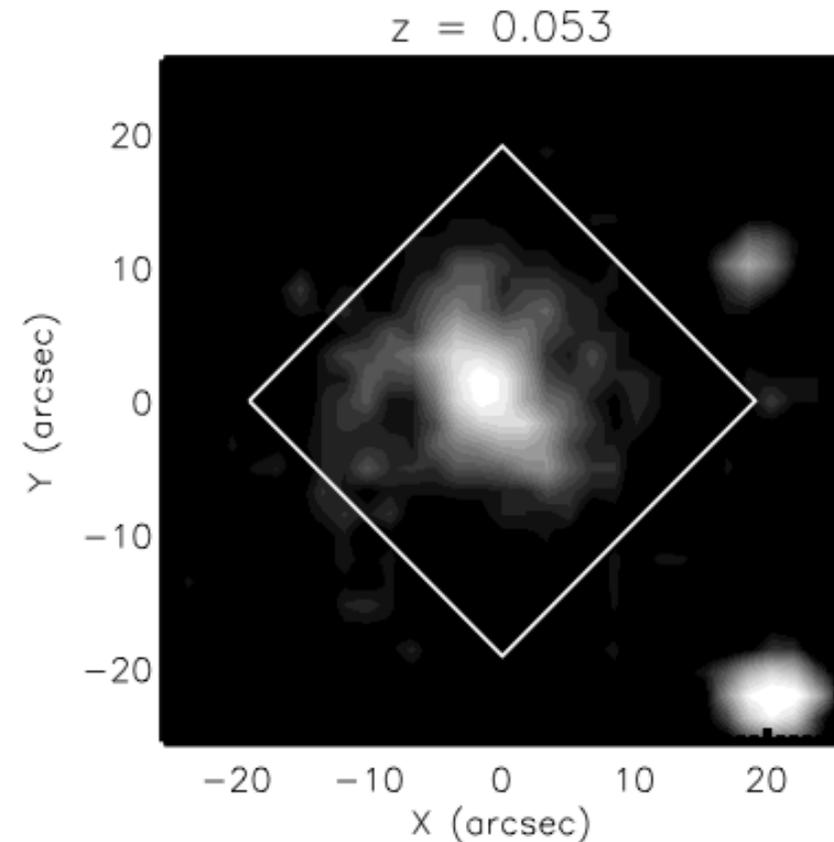
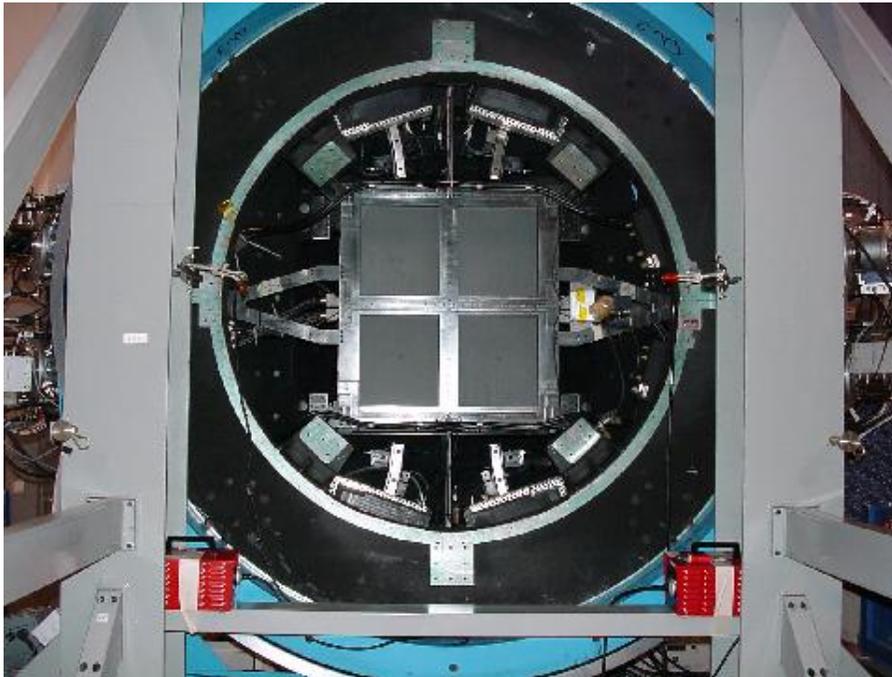
Gibt es den richtigen IFS am VLT ?



Antrag

Beobachtungen von 24 SDSS Galaxien mit den VIMOS IFS

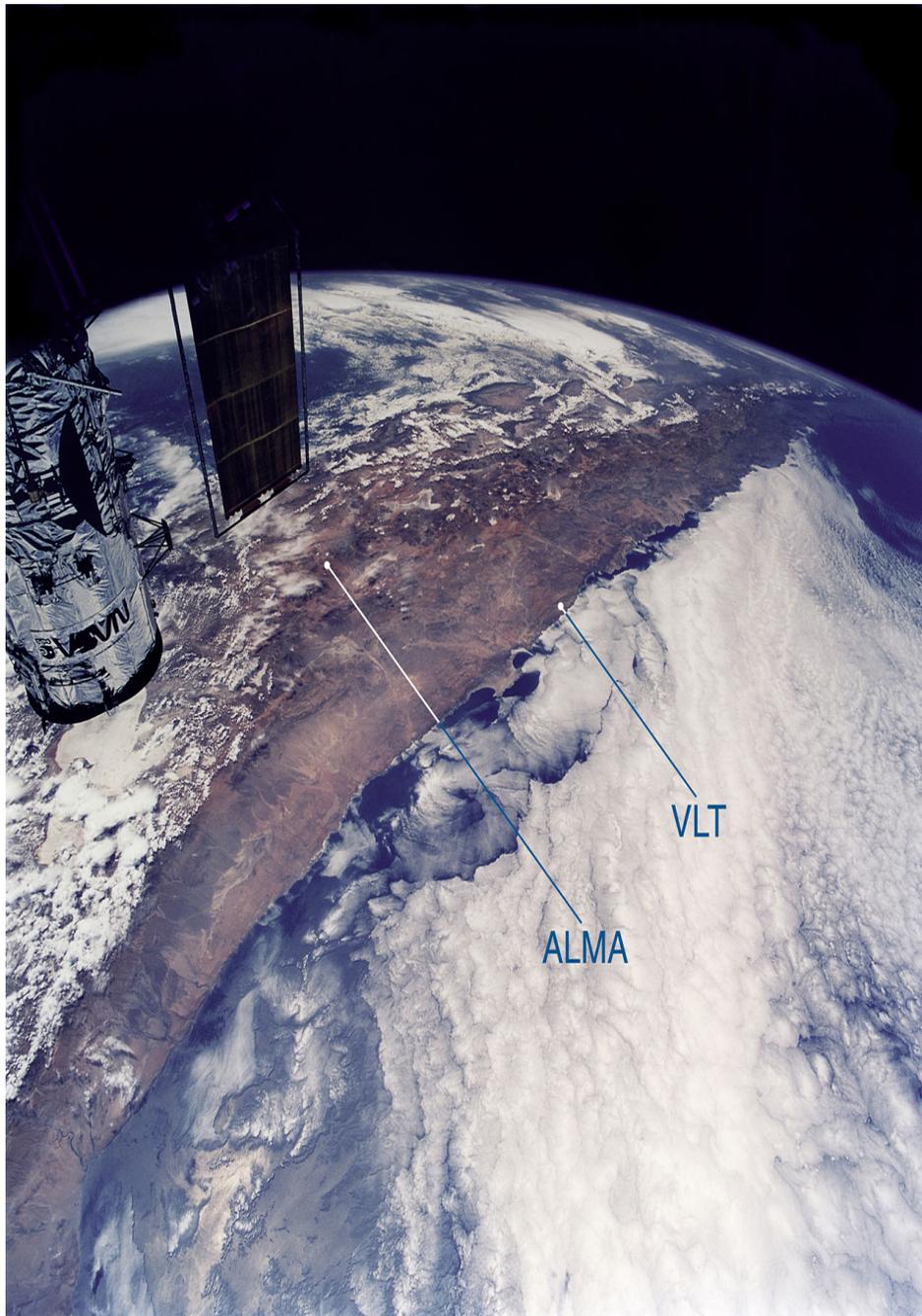
Antrag war erfolgreich !



Blickfeld: 27 x 27 Bogensekunden

1600 Spektren, 500 bis 900 nm, $R \sim 720$

Reise: Nach Chile

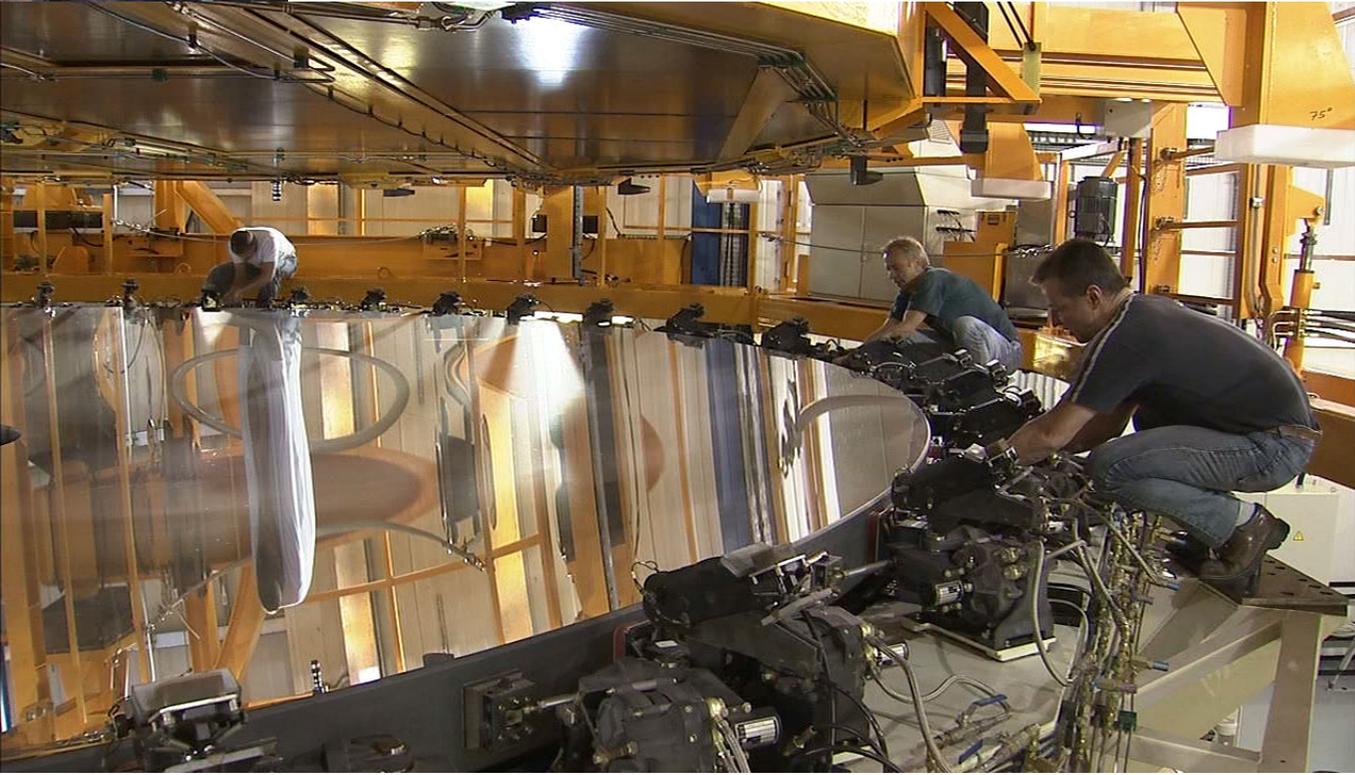
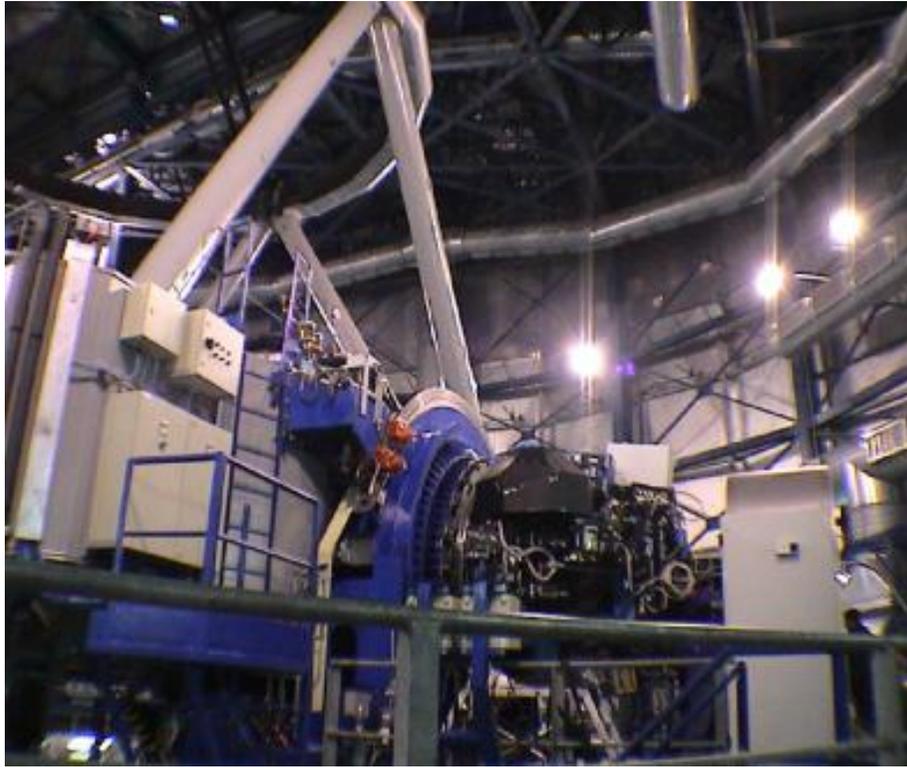


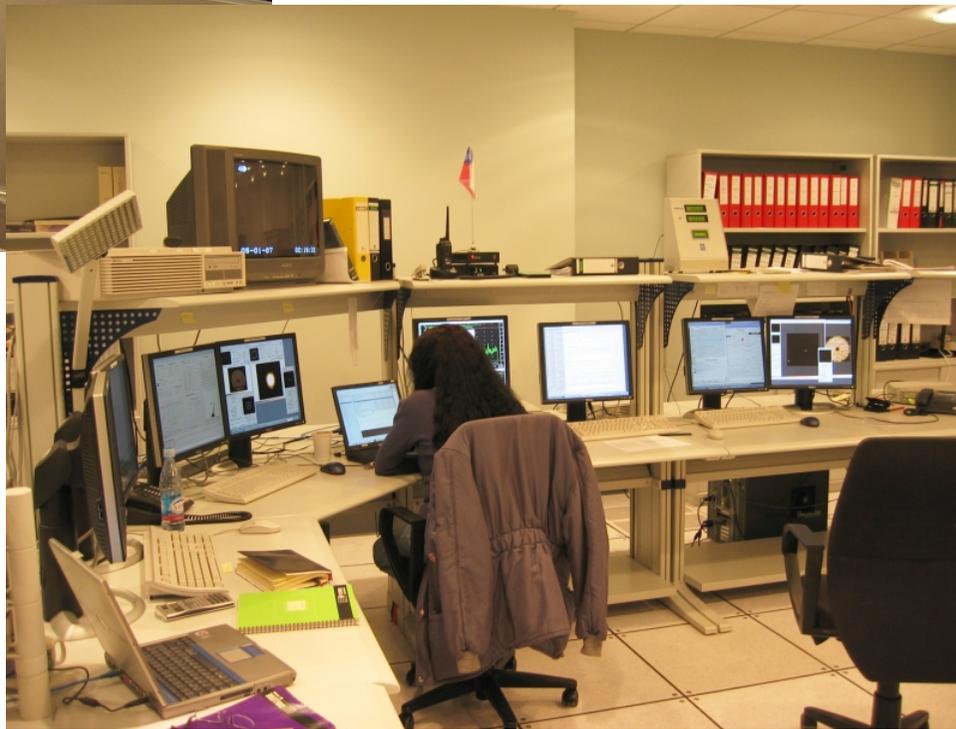
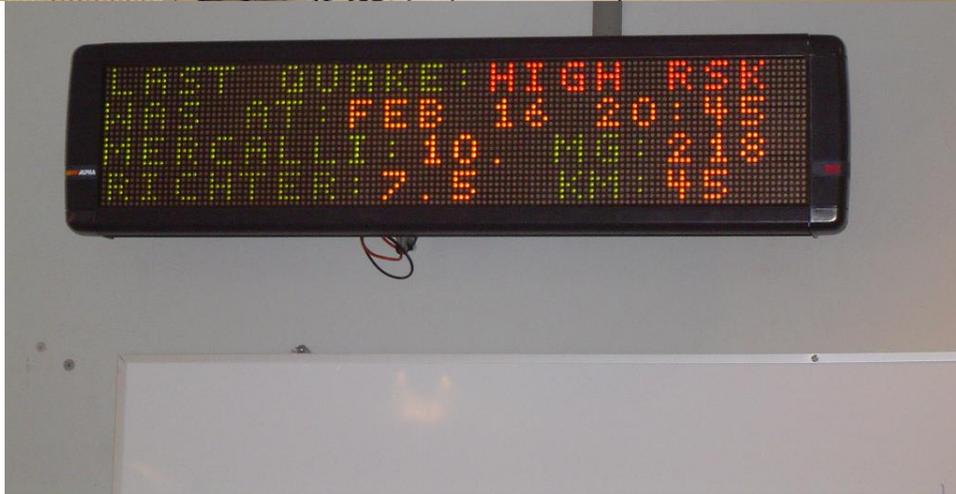
Reise: von Santiago nach Paranal







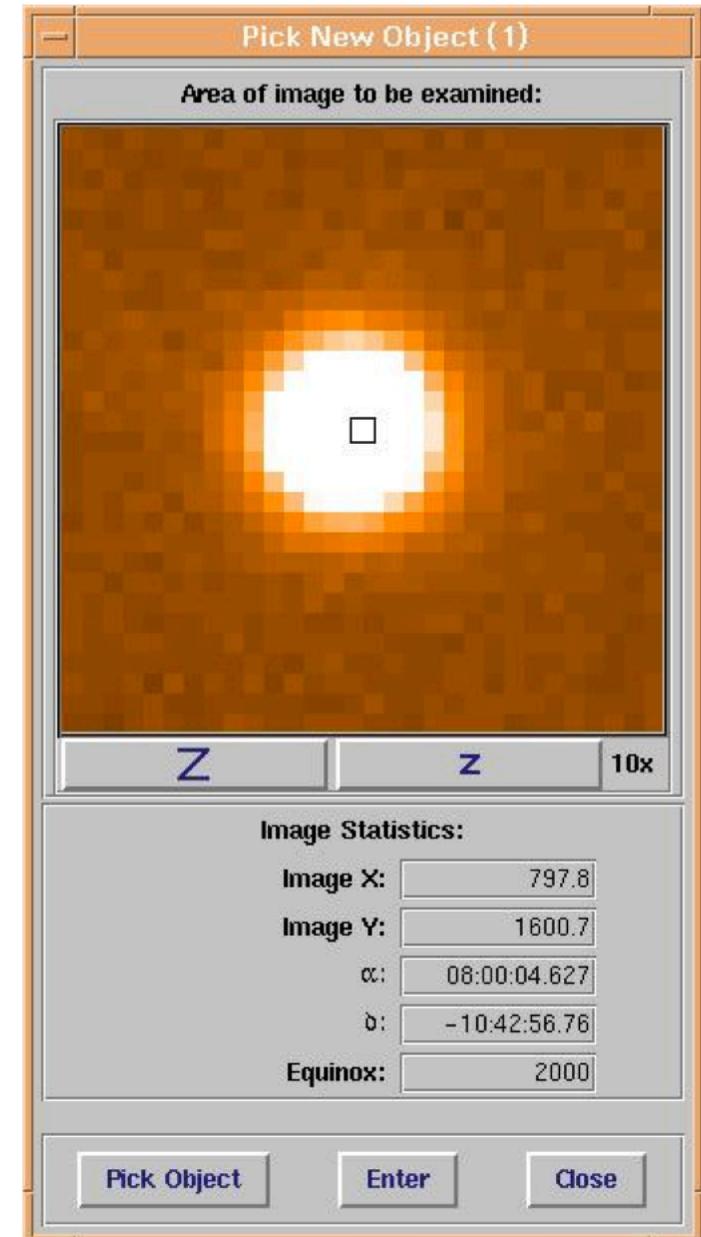
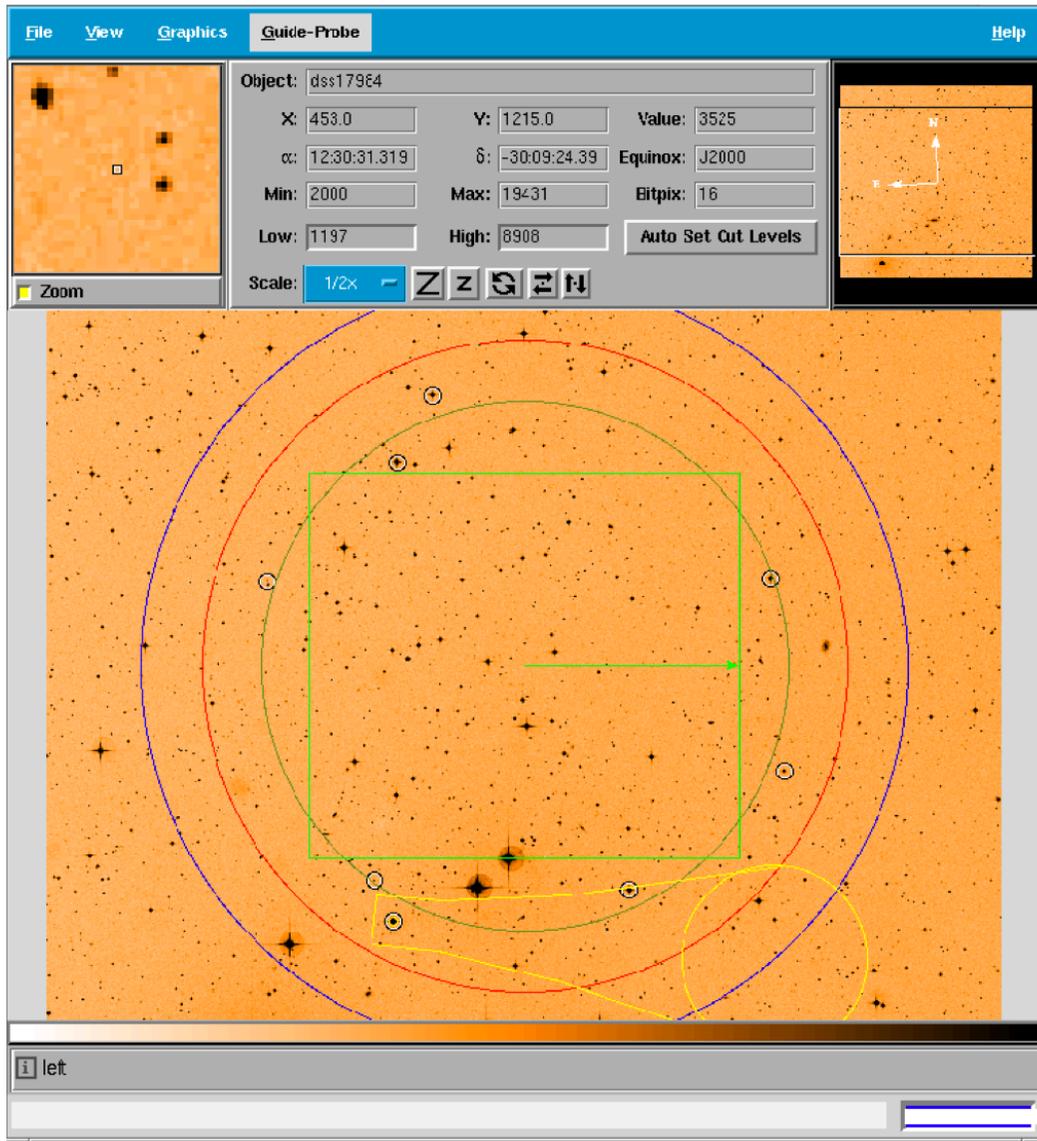




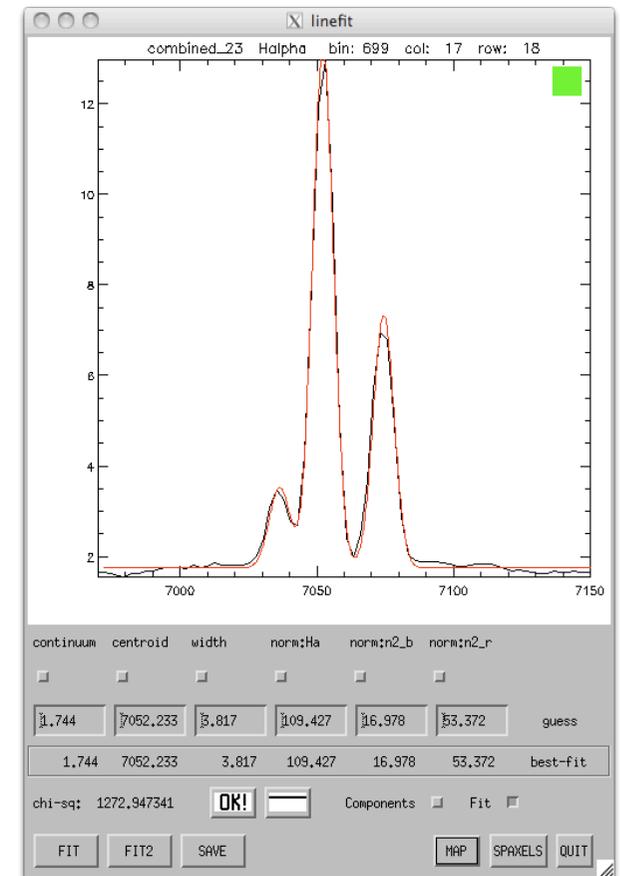
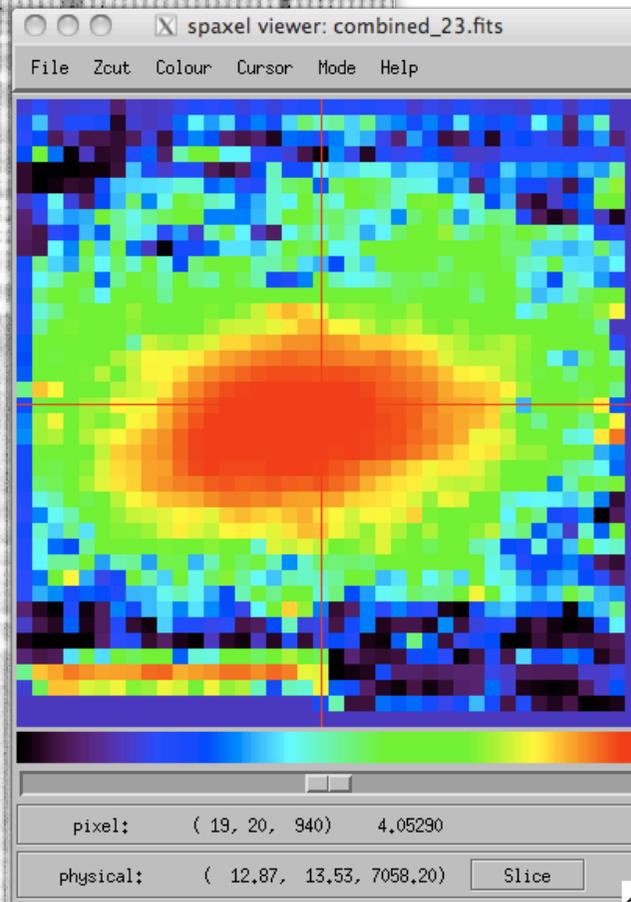
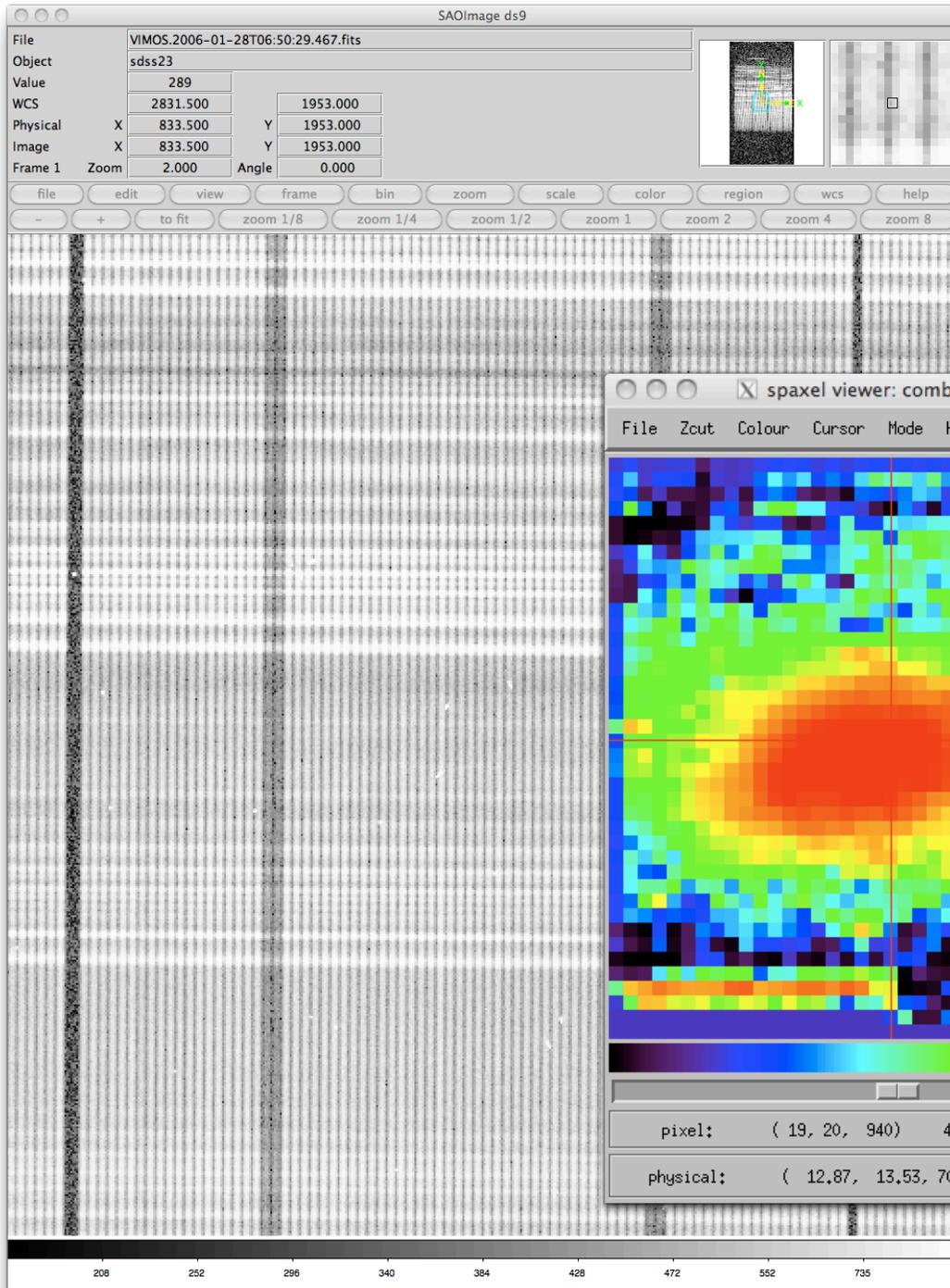
Beobachtungsdetails

- IFS ist einfach: “point and click”
- Lange Belichtungszeit: 2 x 1800 sec
 - ~1 EUR / sec !
- Man darf nichts anfassen.
- Teleskop/Instrument wird kontrolliert mit vorher festgelegten ‘*Observing Blocks*’ (Textdokumente)
- Man sagt nur dem ‘telescope operator’ welches Textdokumente er durchführen soll.

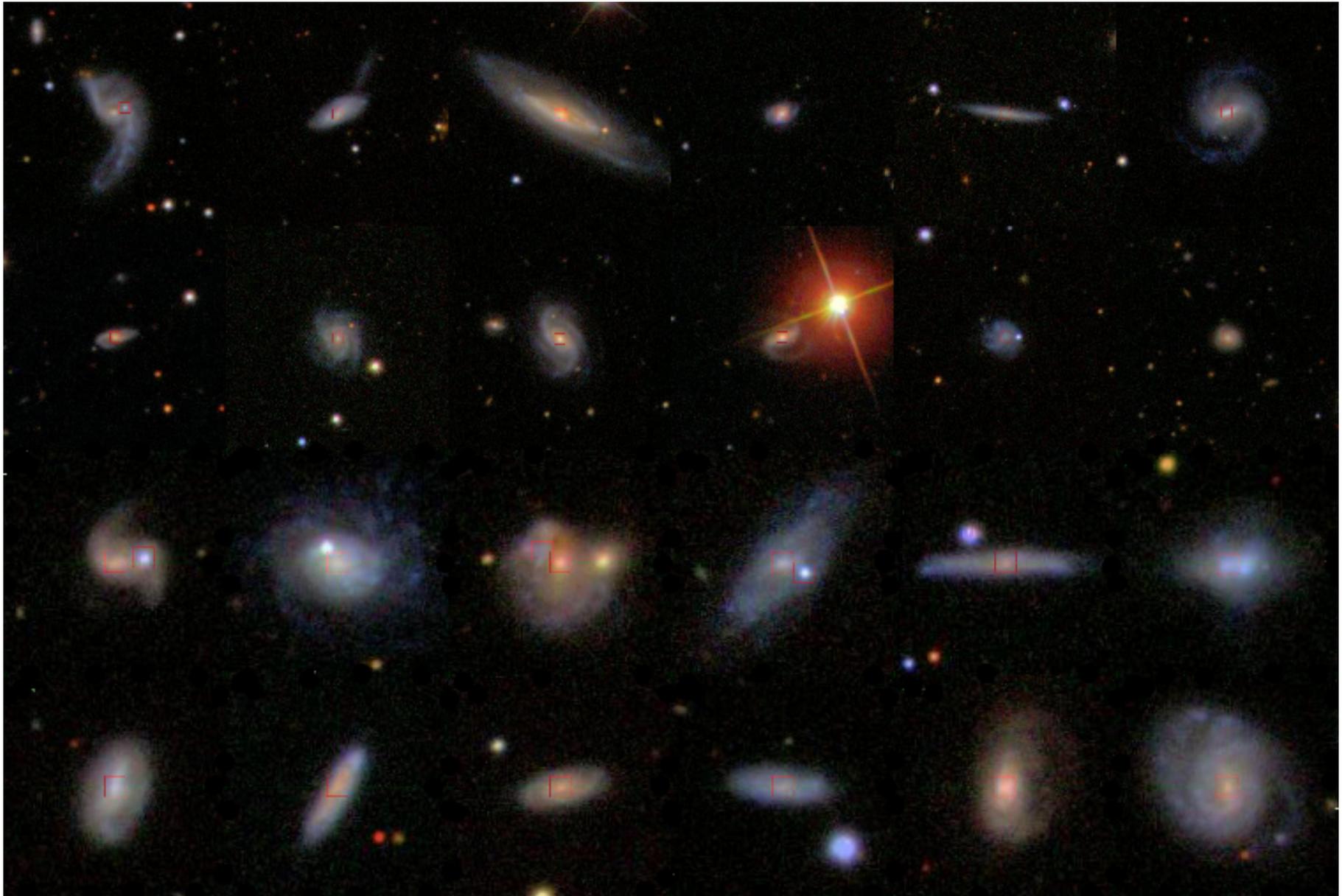
Was sieht man wirklich ?



Datenreduktion & Analyse



Ergebnisse



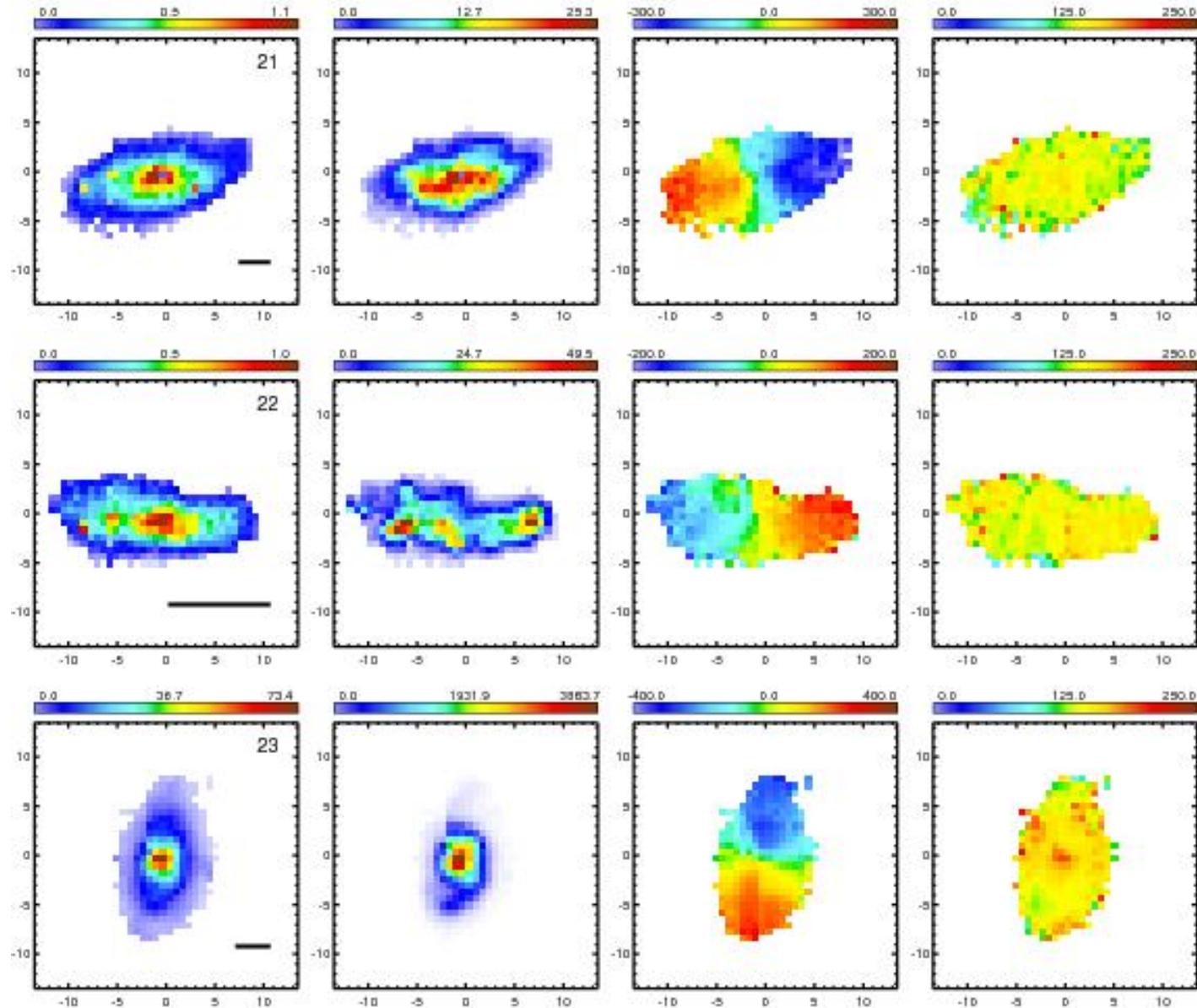
Ergebnisse

Sterne

Gas: H α Linie

V: rotation

V: dispersion



Ergebnisse

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Beyond the fibre: Resolved properties of SDSS galaxies

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18 March 2011

ABSTRACT

We have used the integral field spectrograph VIMOS to map the emission line properties in a sample of 24 star forming galaxies selected from the SDSS database. We fit the $H\alpha$ + $[NII]$ emission lines in each spectrum to derive continuum, $H\alpha$ flux, velocity and velocity dispersion maps. The $H\alpha$, $H\beta$, $[NII]$ and $[OIII]$ emission lines are also fit in summed spectra for annuli of increasing radius. We present plots showing the radial behaviour of $EW[H\alpha]$, colour and emission line ratios. The strong fluctuations observed in these radial profiles demonstrate that extrapolations based on single aperture ($3''$ diameter) SDSS spectra to global galaxy properties can lead to large uncertainties for individual systems. We use our VIMOS maps to quantify the differences by taking the ratio of total $H\alpha$ flux to that of a simulated SDSS fibre. A comparison of the flux ratios to colour-based SDSS extrapolations show that such aperture corrections are over-estimated, with no measured correlation to the true correction for individual galaxies. We examine various signatures of nuclear activity (line ratios, dispersion peaks, radio emission). Half of the galaxies in our sample are fully consistent with pure star forming systems.

Key words: galaxies: – galaxies: evolution – galaxies: kinematics and dynamics – galaxies: structure.

1 INTRODUCTION

The unprecedented large number of galaxies observed in the Sloan Digital Sky Survey (SDSS; York et al. 2000) has made

SAURON (Bacon et al. 2001) to study early type galaxies, PINGS (Rosales-Ortega et al. 2010) to map the properties of disk galaxies and Califa (Sánchez et al. 2011) an ambi-

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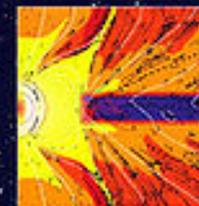
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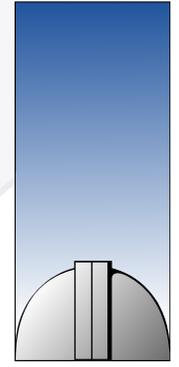
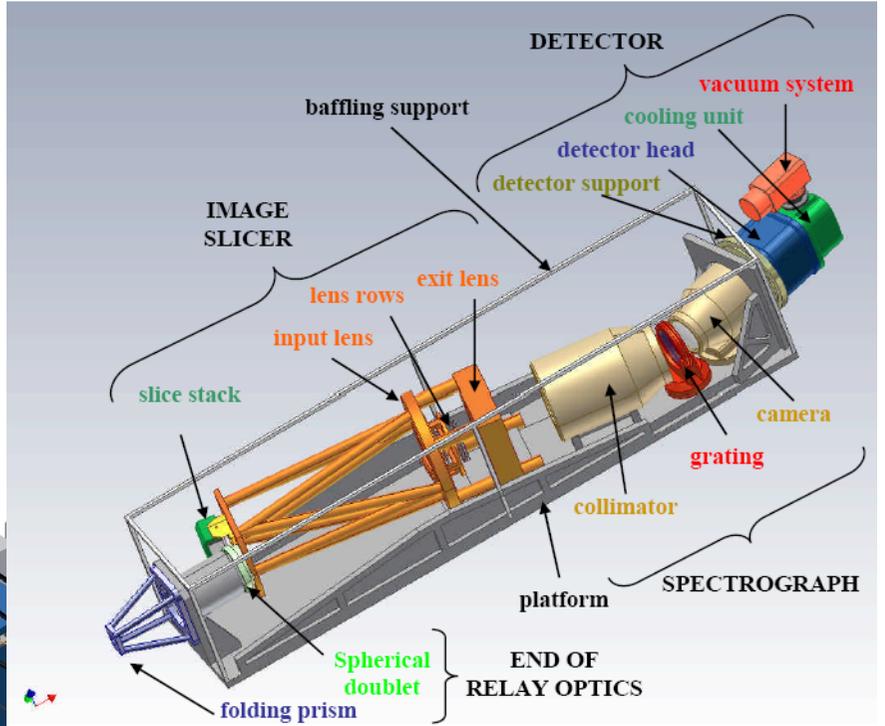
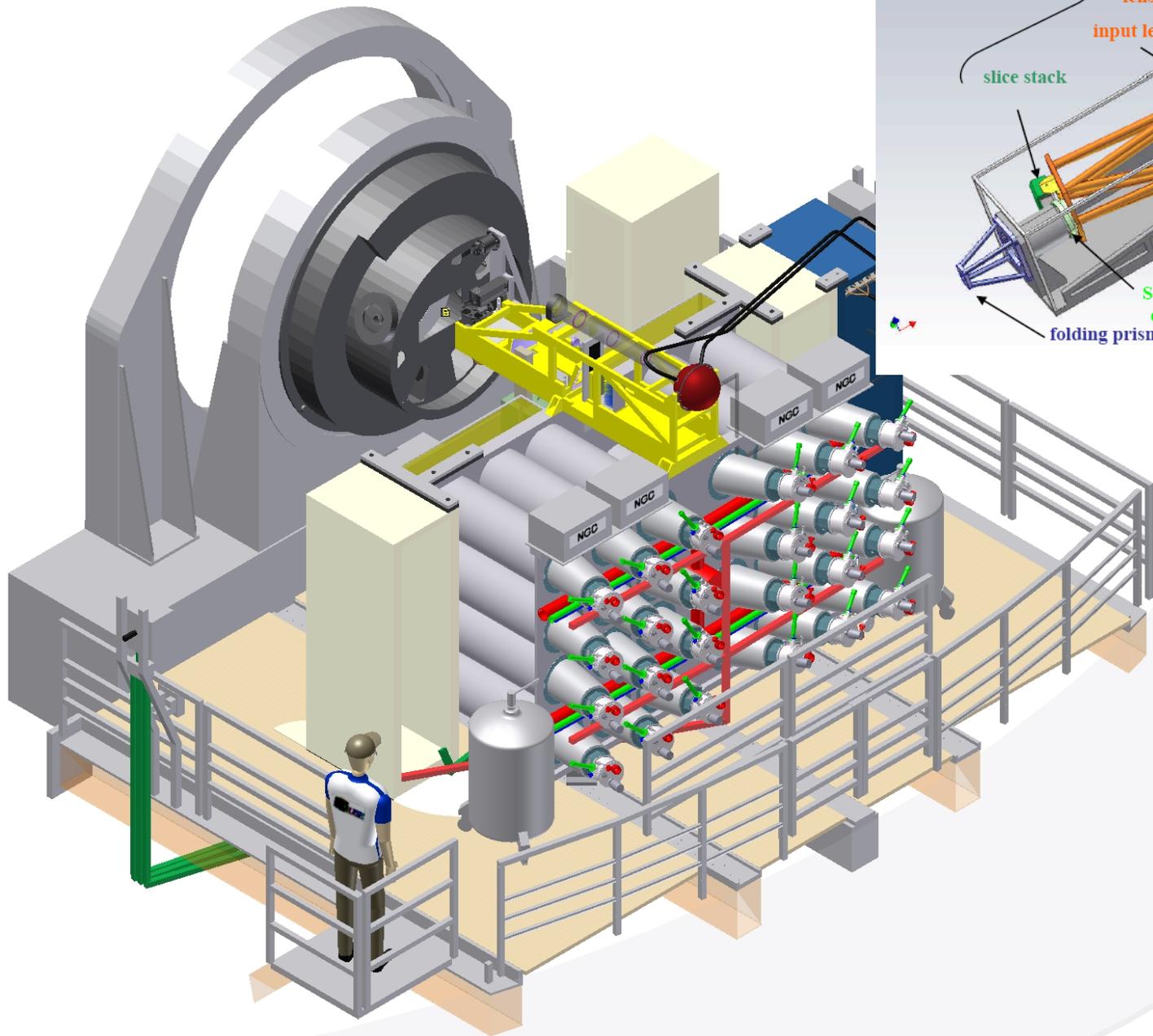


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