



# Welcome to ASTRON!

Mike Garrett  
General Director ASTRON  
Leiden, Swinburne



ASTRON

Netherlands Institute for Radio Astronomy

Nova School, Dwingeloo, October, 2008

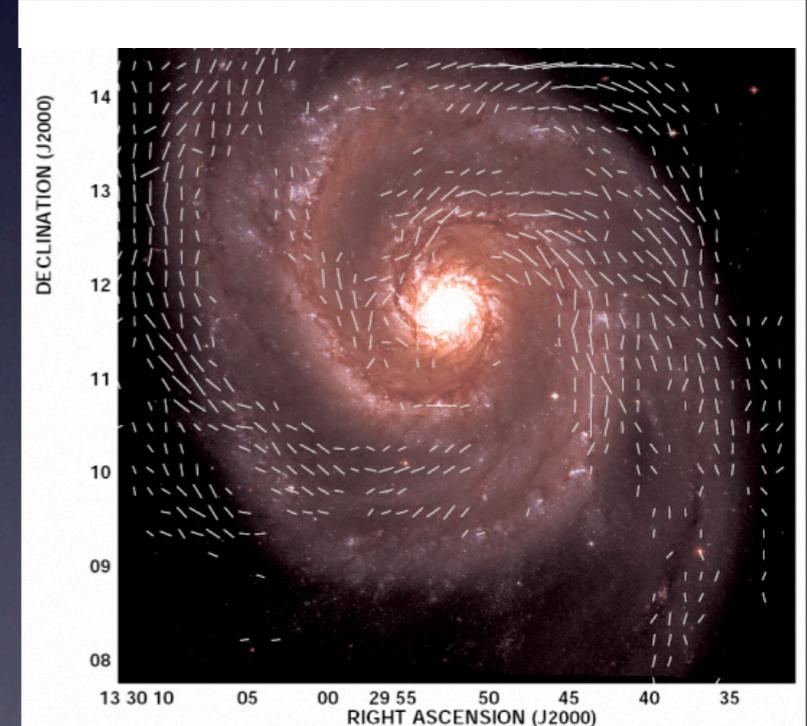
- Employ about 215 staff in Dwingeloo
- ASTRON's Annual turn-over ~ 16 MEuro
  - 165 staff employed
- ASTRON hosts:
  - JIVE (35 staff)
  - NOVA-ASTRON Opt/IR lab

The logo for ASTRON, featuring the word "ASTRON" in a bold, white, sans-serif font. The letter "R" is stylized with a white outline and a white fill. The logo is set against a background of a blue starry sky and a white radio telescope structure.

Netherlands Institute for Radio Astronomy

OR, Dwingeloo, 10 June 2008

- ASTRON's current priorities:
  - Building & commissioning LOFAR
  - Square Km Array (technology) developments
  - Building up a significant Astronomy Group



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- **ASTRON Divisions:**
  - Radio Observatory (Rene Vermeulen)
  - R&D labs (Marco de Vos)
  - Astronomy Group (Raffaella Mroganti)
  - Admin/Support (Herve Jamin)
  - LOFAR (Michiel van Haarlem)



*Making discoveries in radio astronomy happen!*

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- Radio Observatory:
  - Joint WSRT & LOFAR operations
  - User support



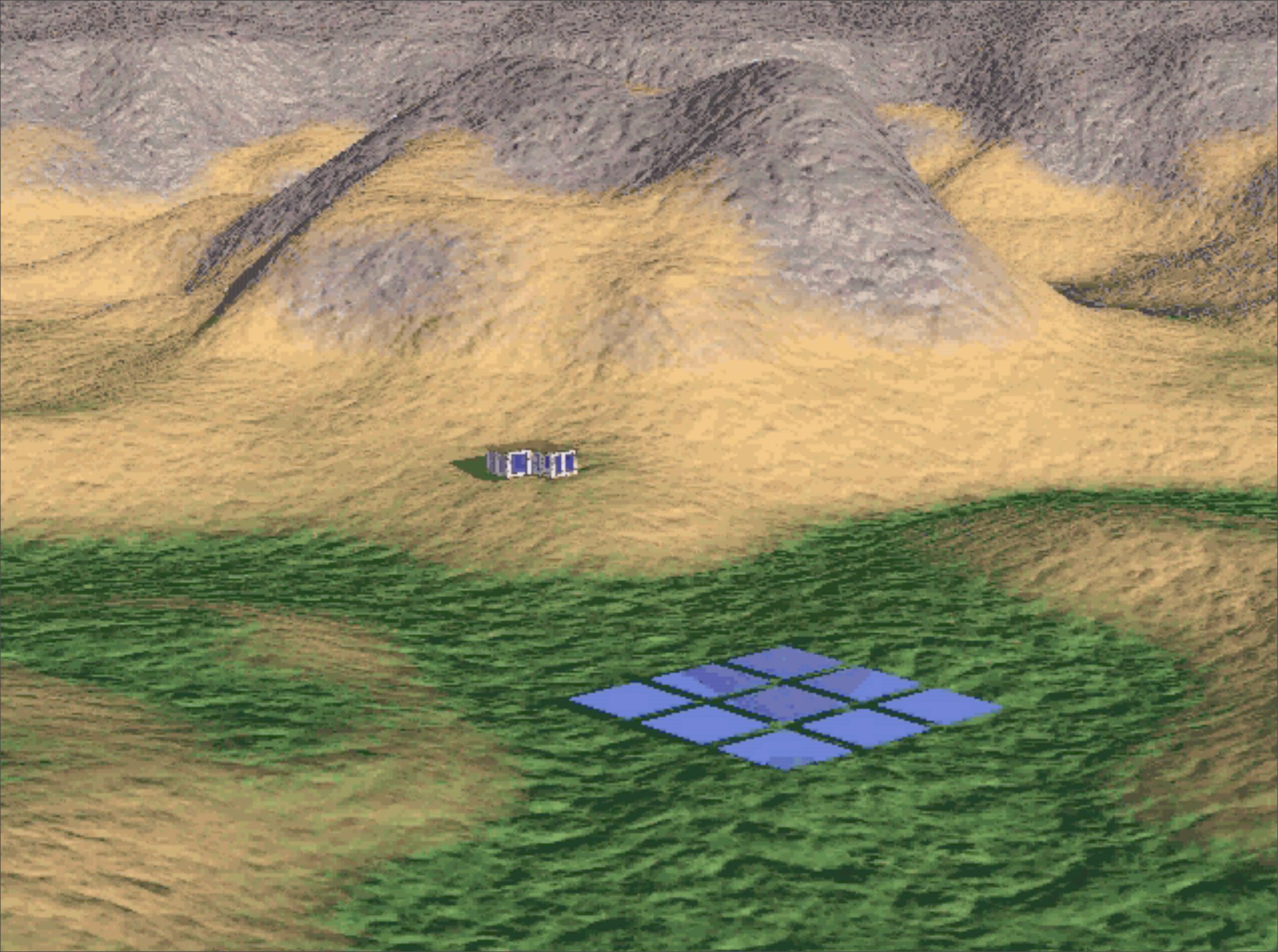
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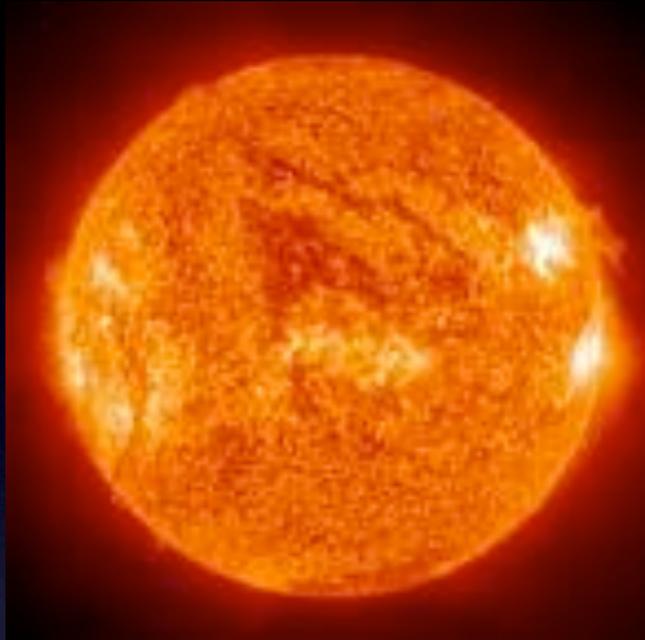
OR, Dwingeloo, 10 June 2008

# LOFAR in a nutshell

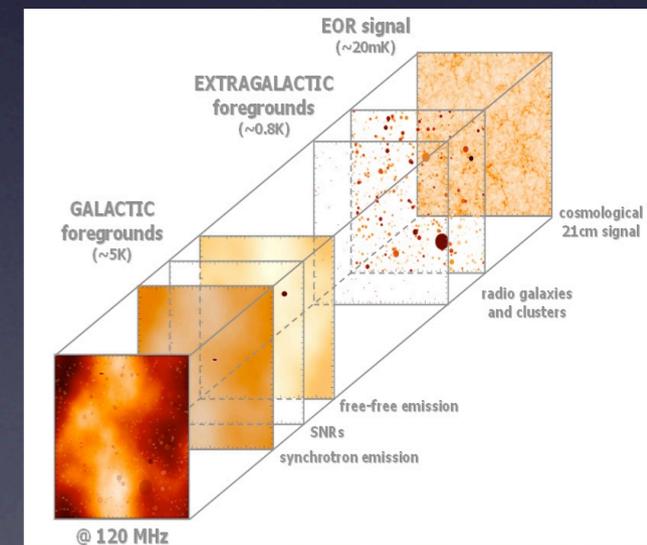
- 40 stations distributed across Netherlands
- > 8 stations located in other European lands
- Unexplored freq. range of 30-230 MHz
- Wide field-of view - 8 independent beams
- Millisecond time resolution
- Data buffering - capture and replay the sky!



# LOFAR Science Case

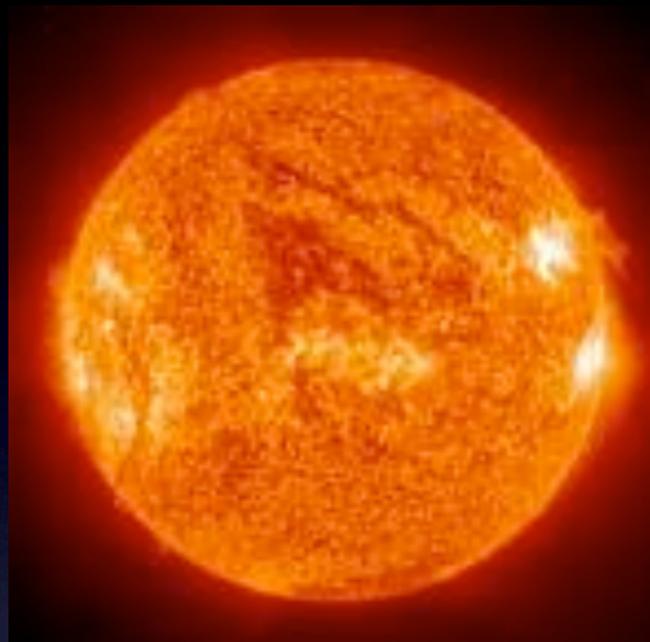


Solar System

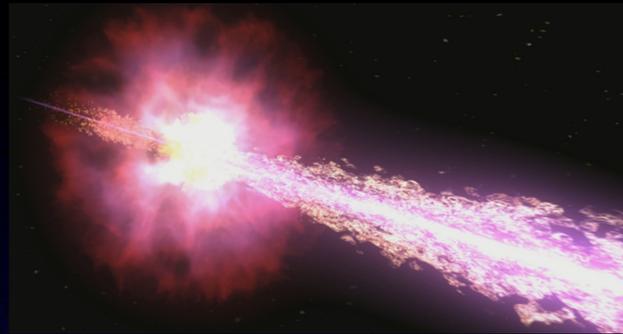


Epoch of  
reionisation

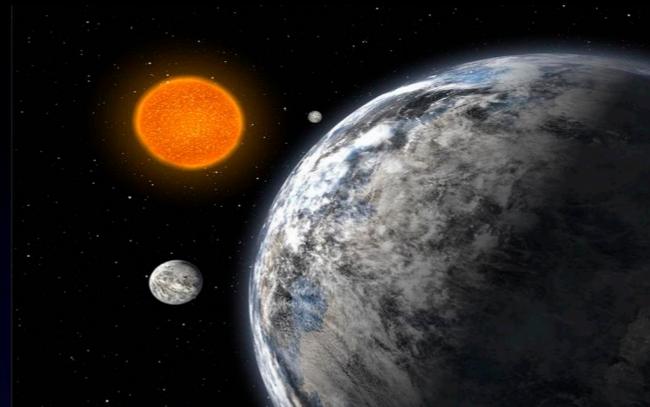
# LOFAR Science Case



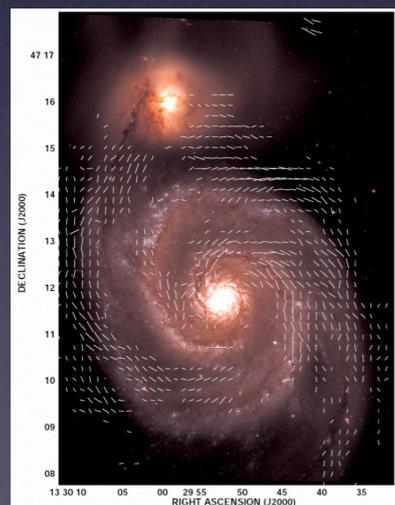
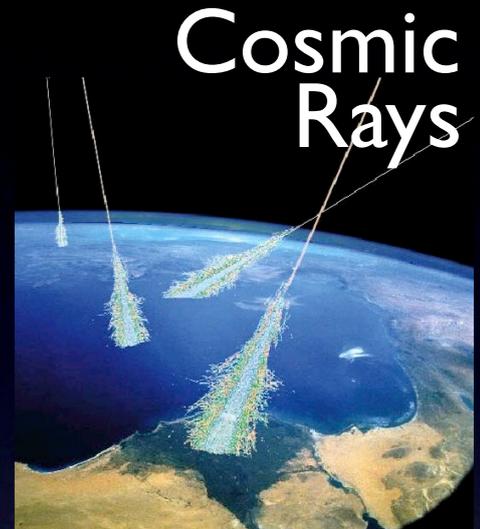
Solar System



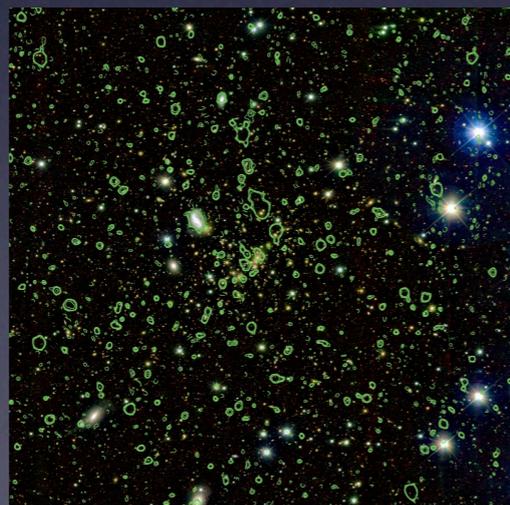
Transient sky



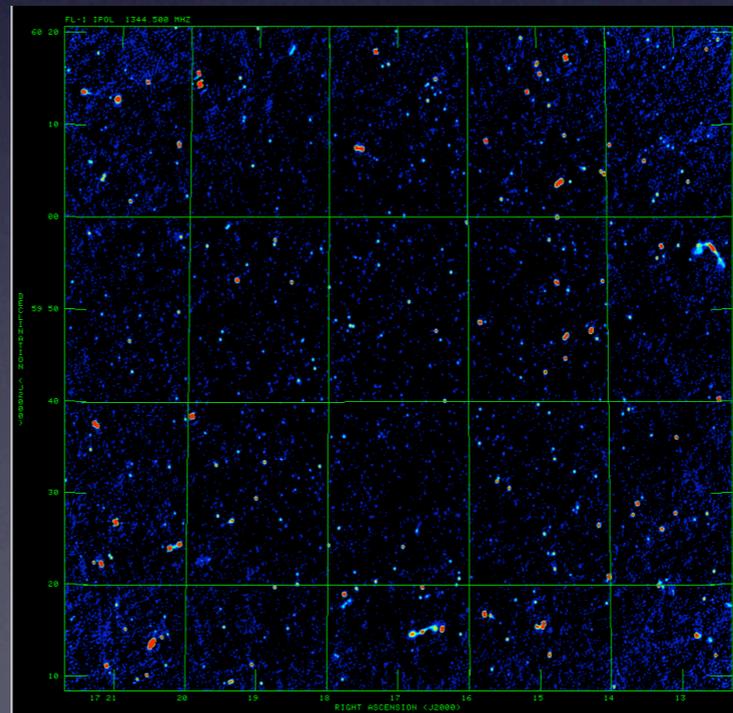
SETI/Exoplanets



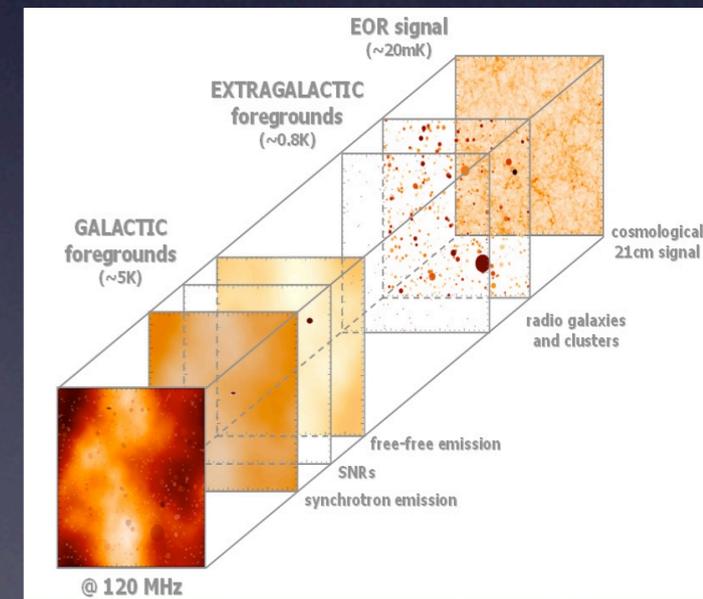
Cosmic Magnetism



LSS + Lensing



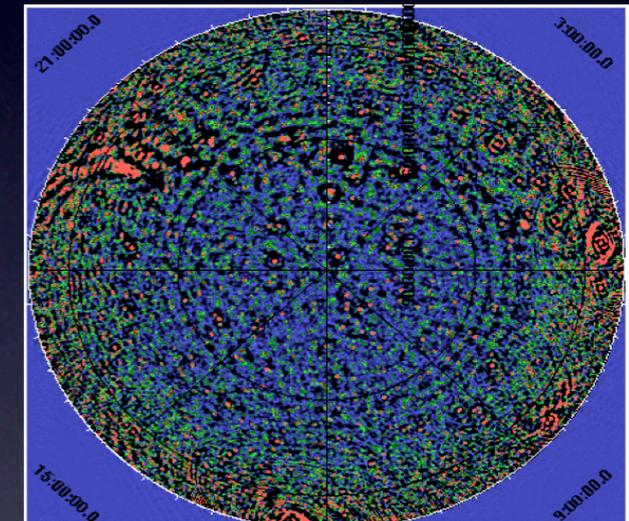
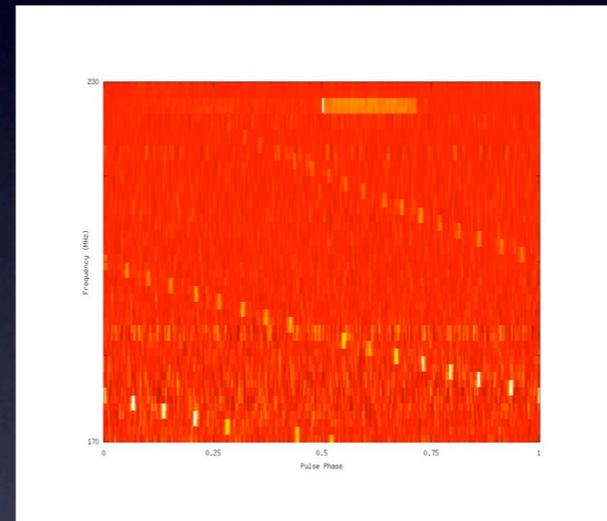
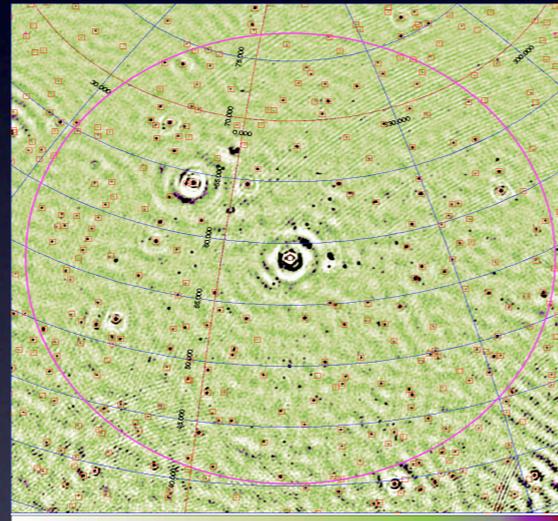
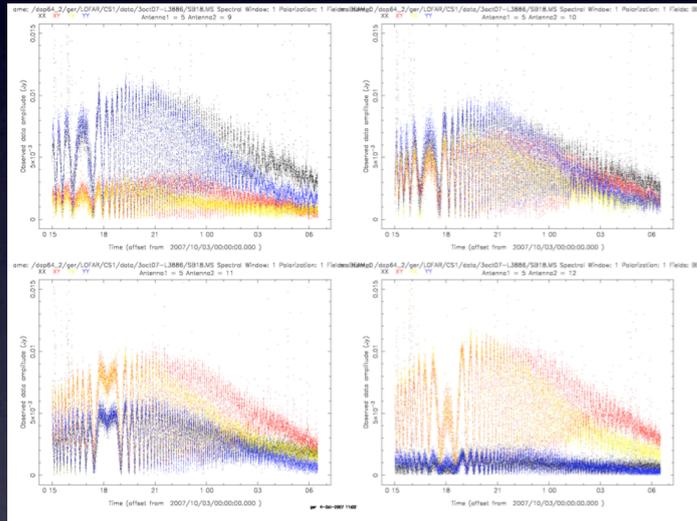
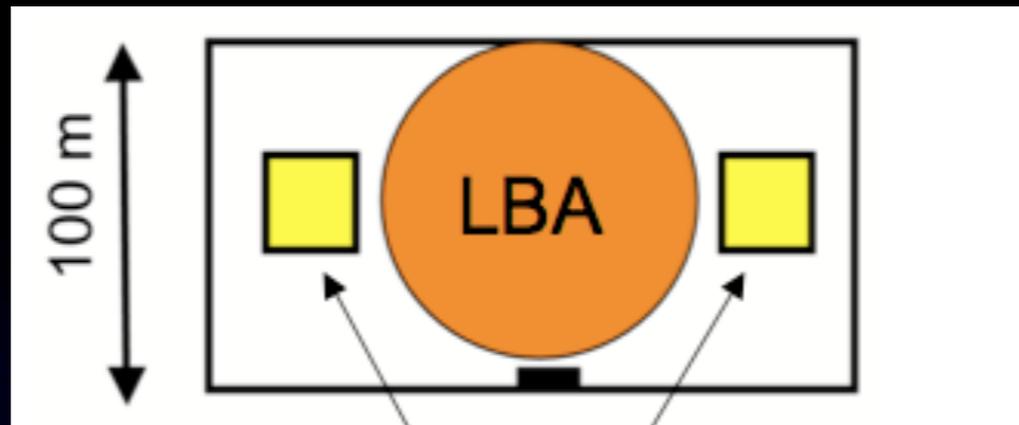
Deep Surveys



Epoch of reionisation

# LOFAR status - last 12 months

**Descope!**



# Site Preparation



# Building LOFAR at Exloo...



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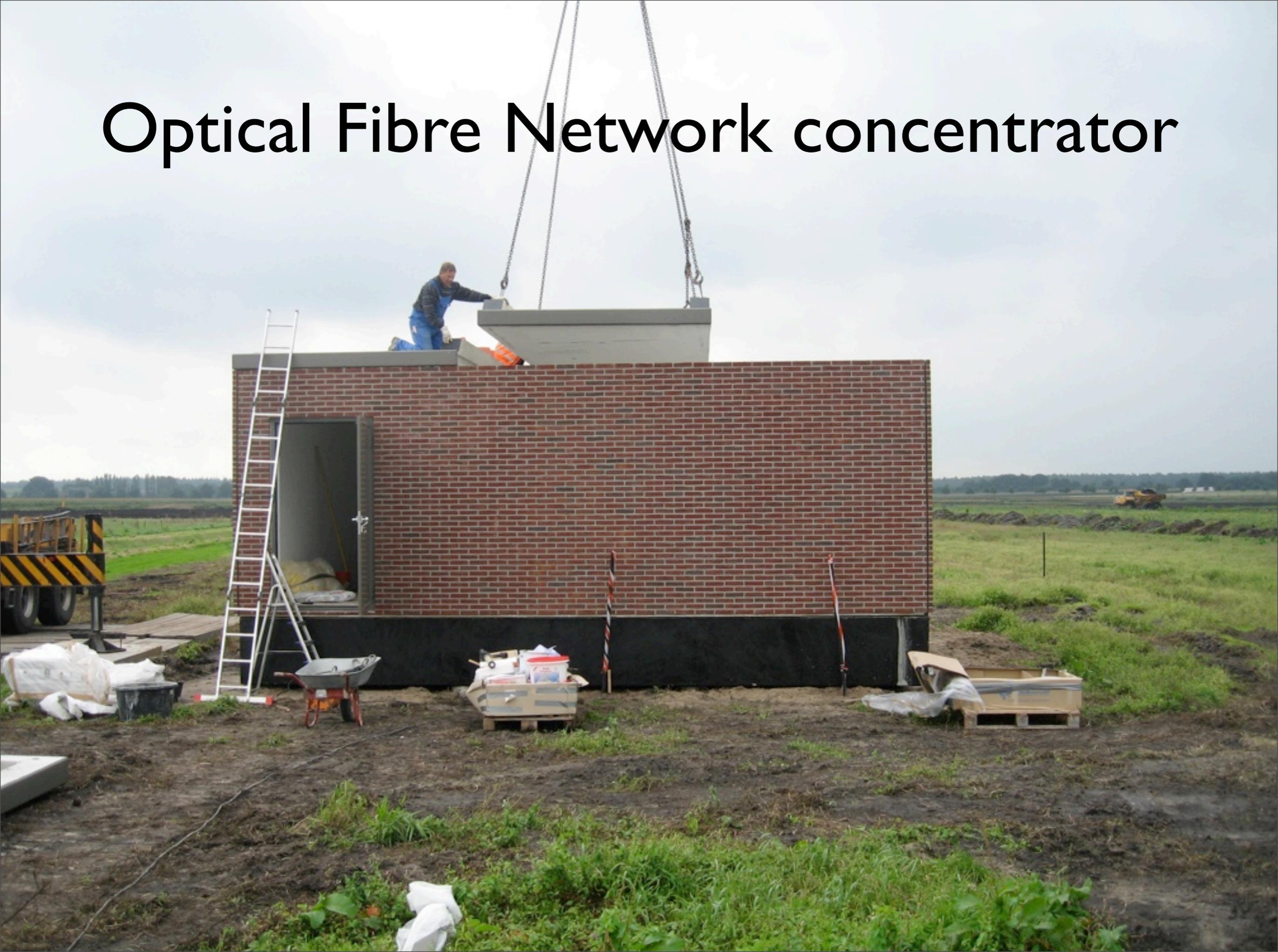
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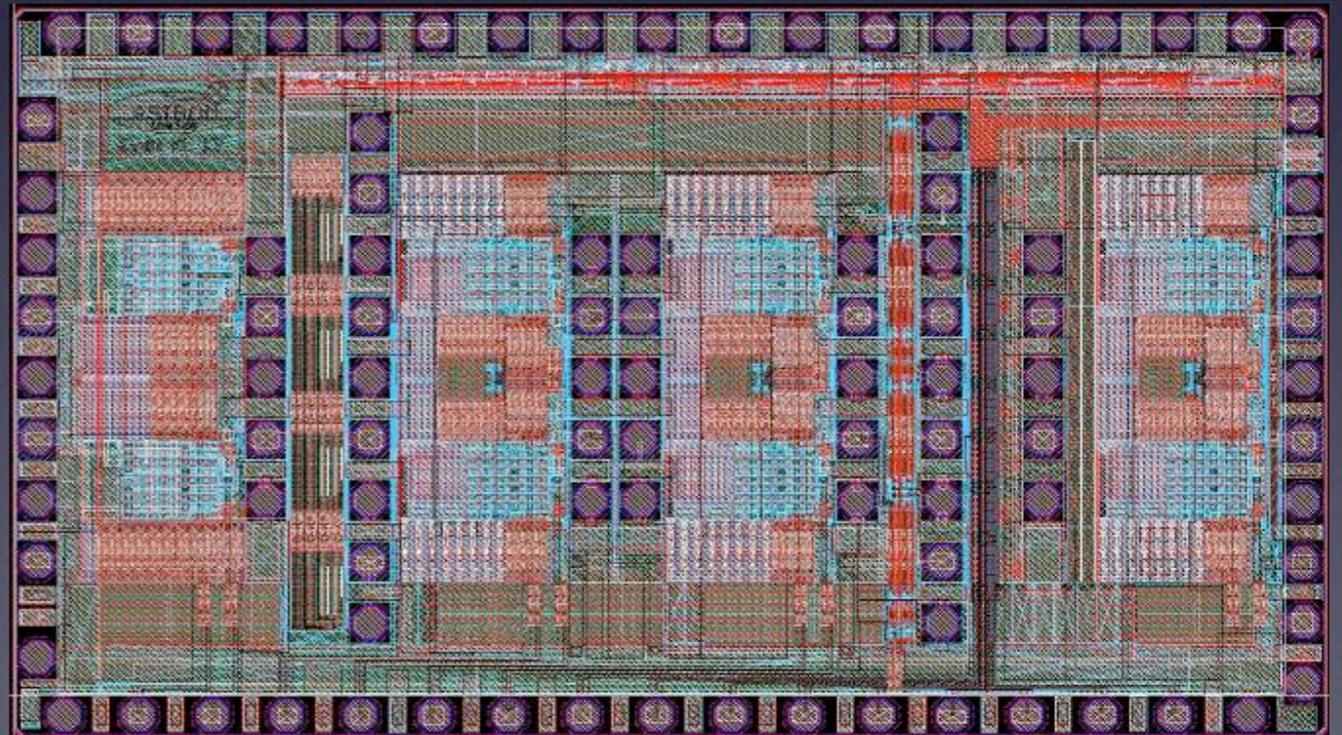
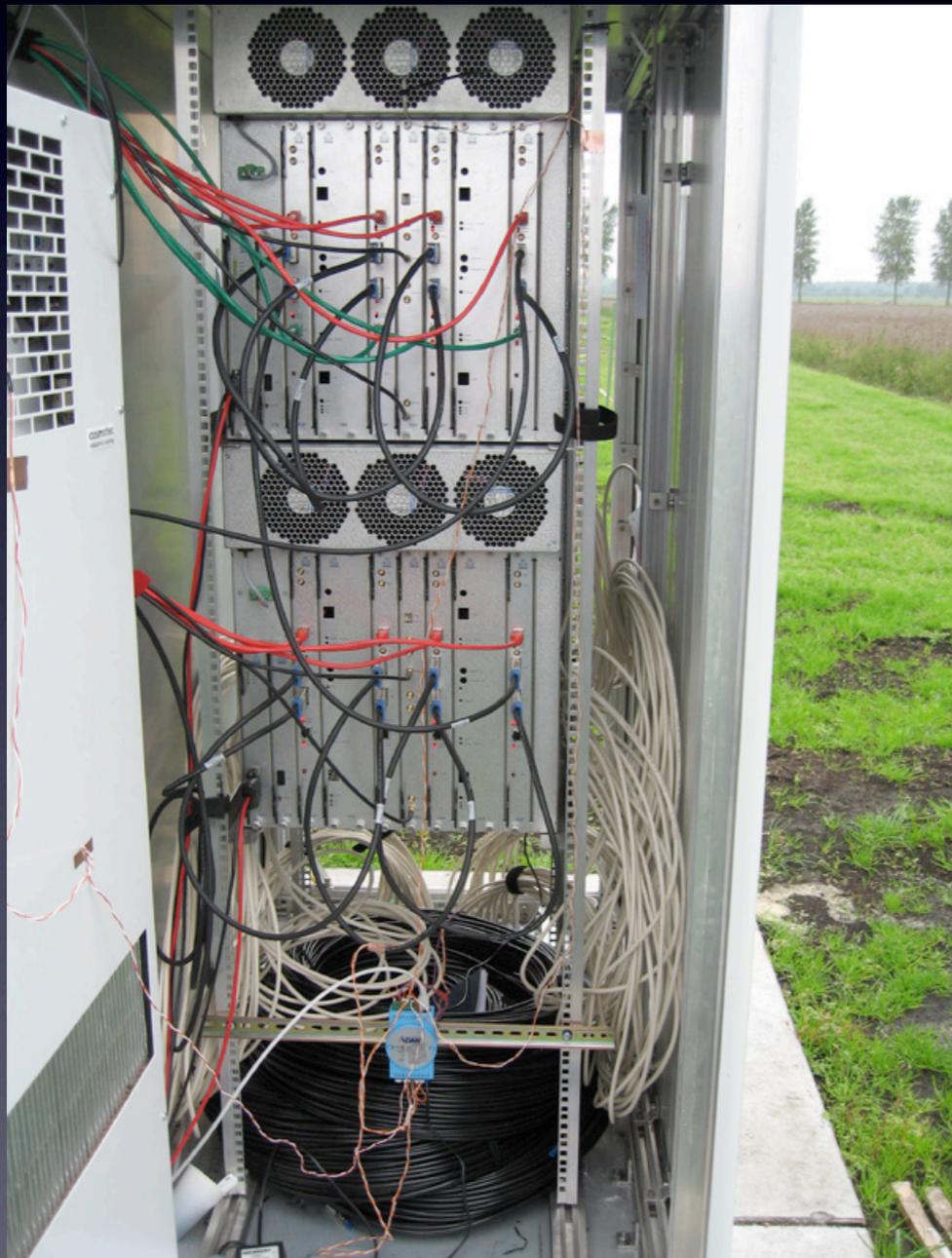
Text

# Optical Fibre Network concentrator

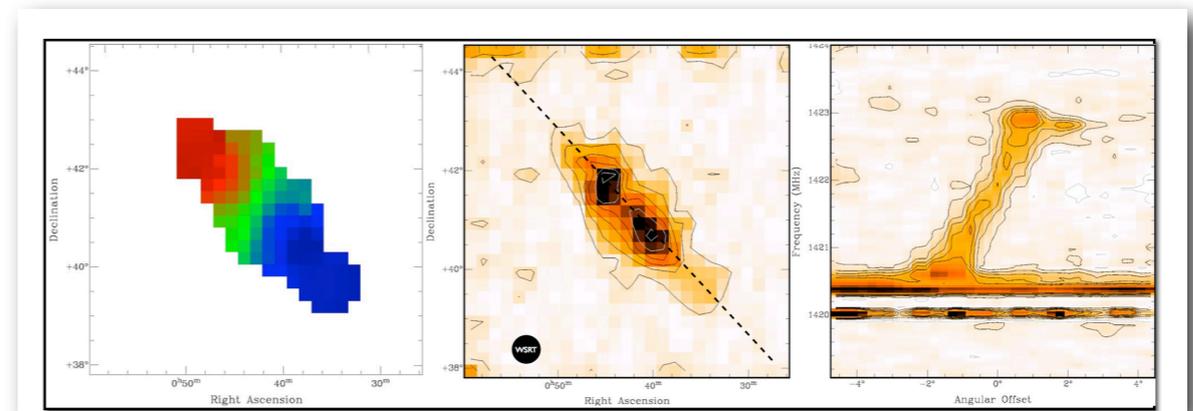
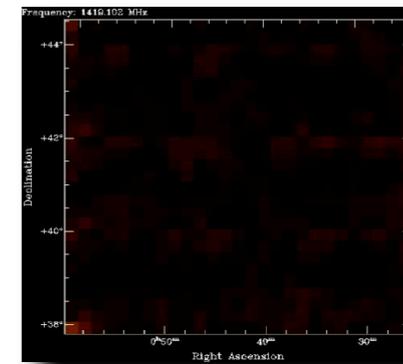
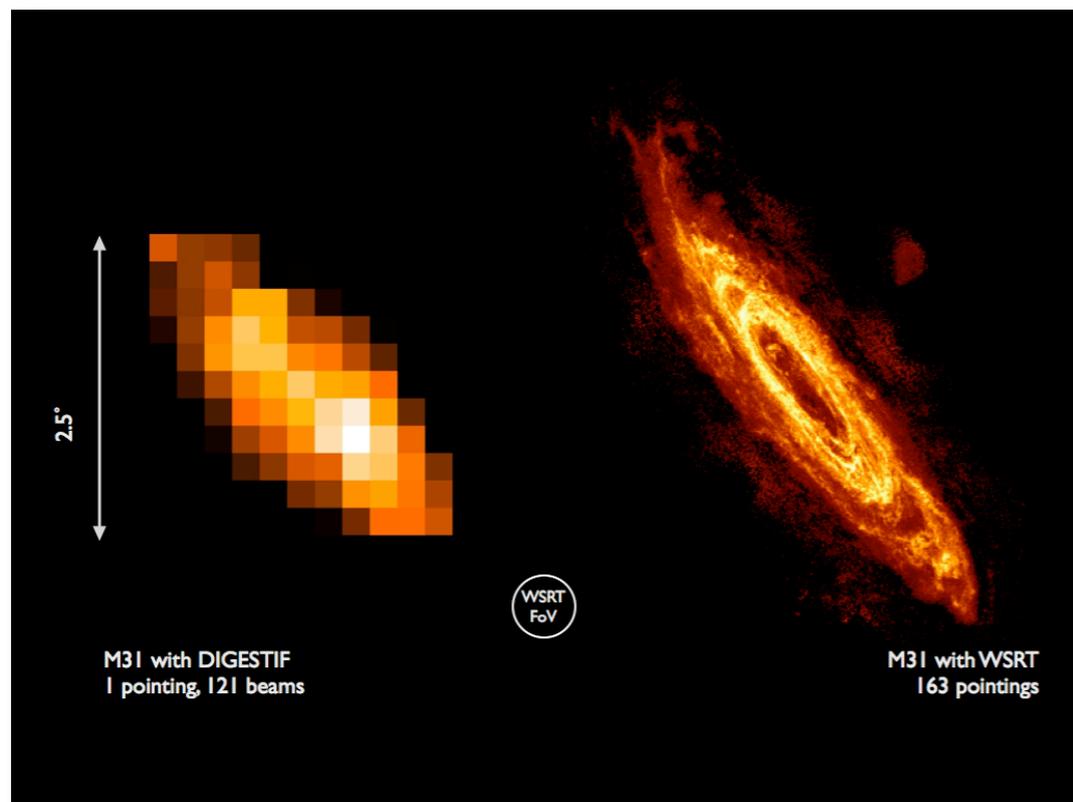


# R&D division

Innovative technology development for: astronomy..



# First images with prototype

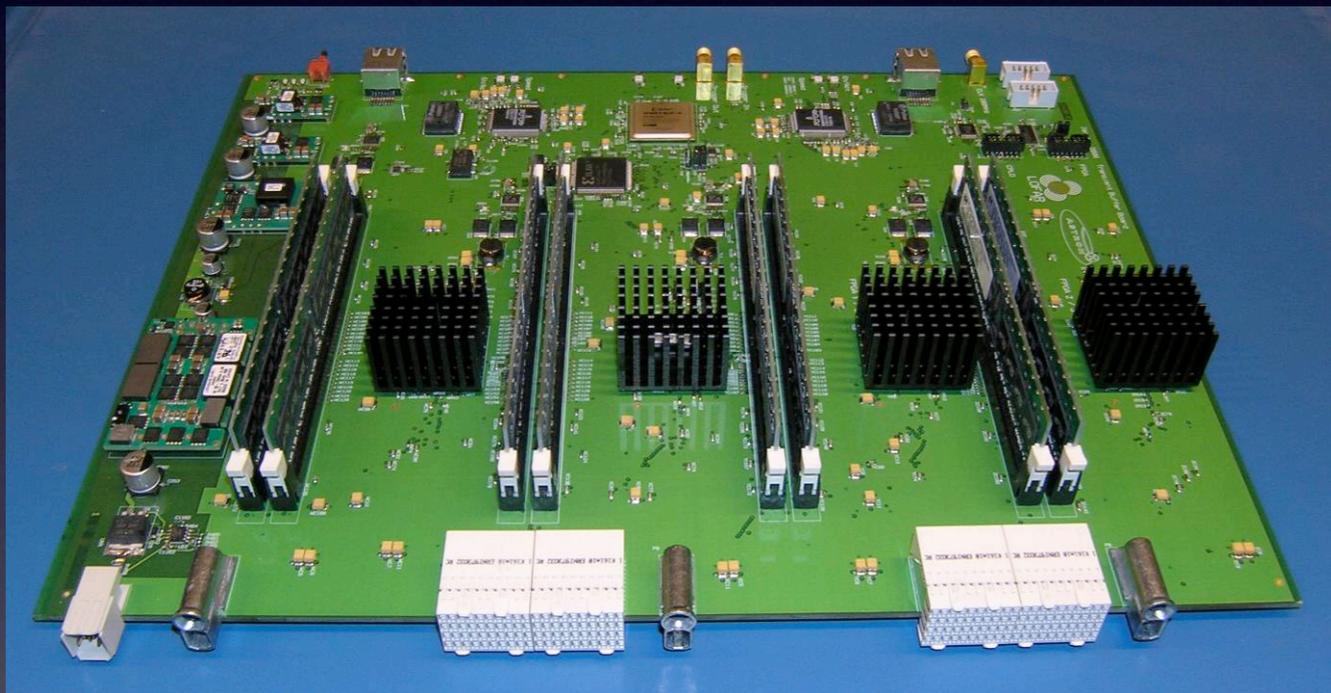


M31

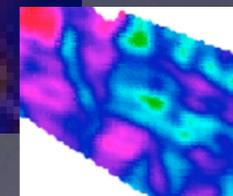
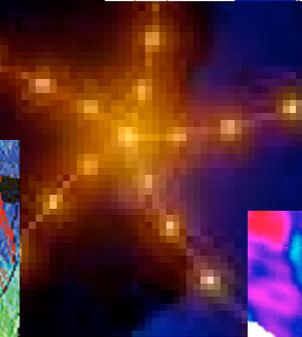
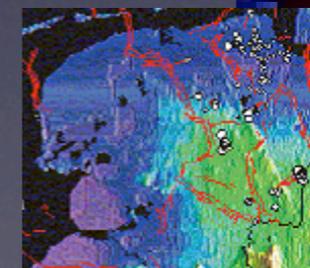
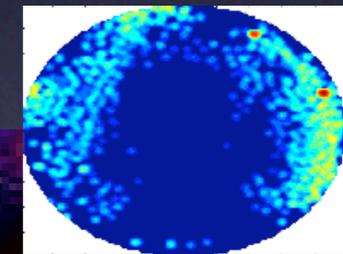
Demonstrated feasibility

# Innovative Technology development

From astronomy to  
the market place...



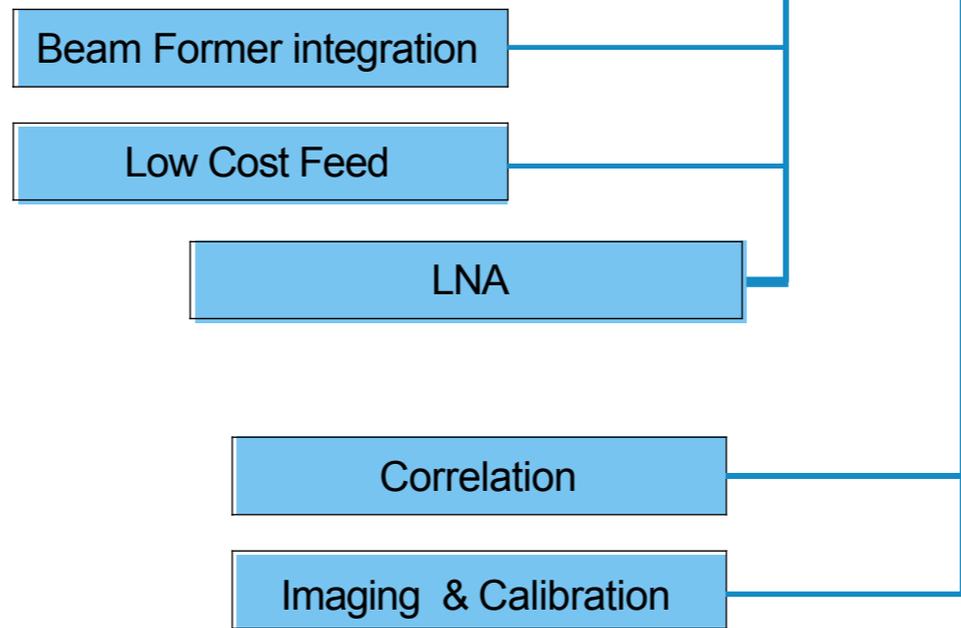
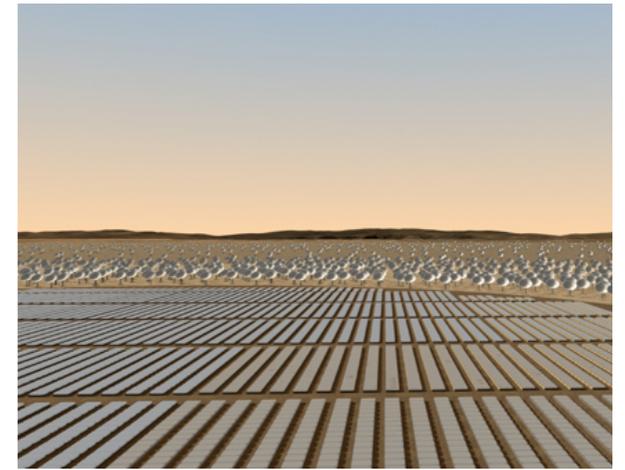
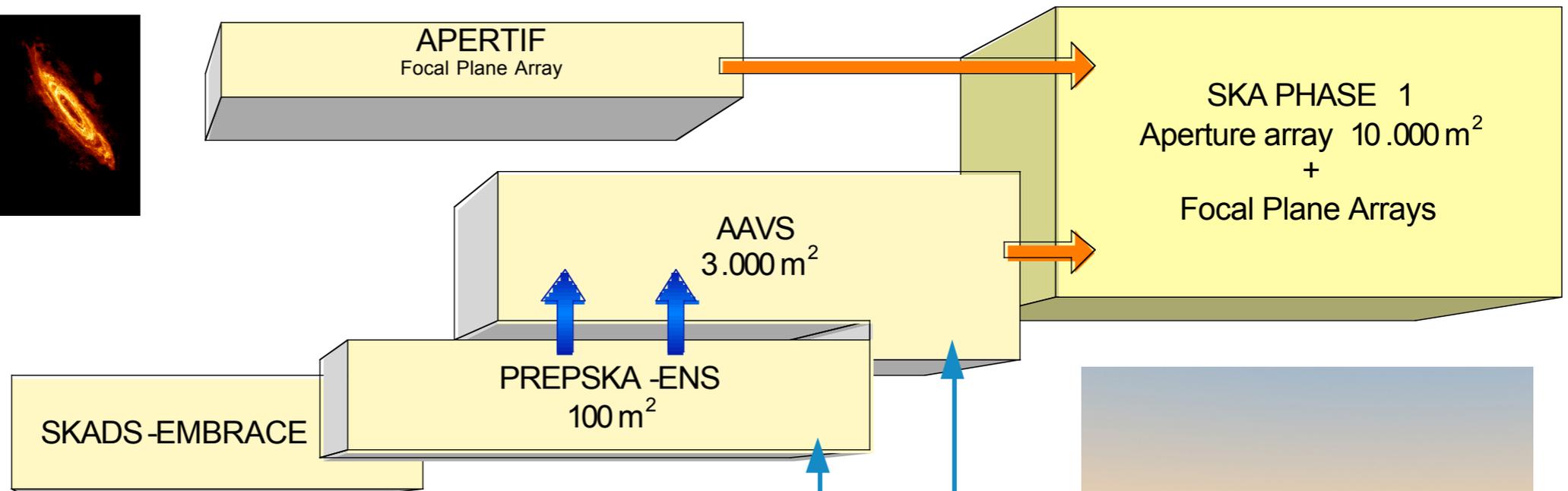
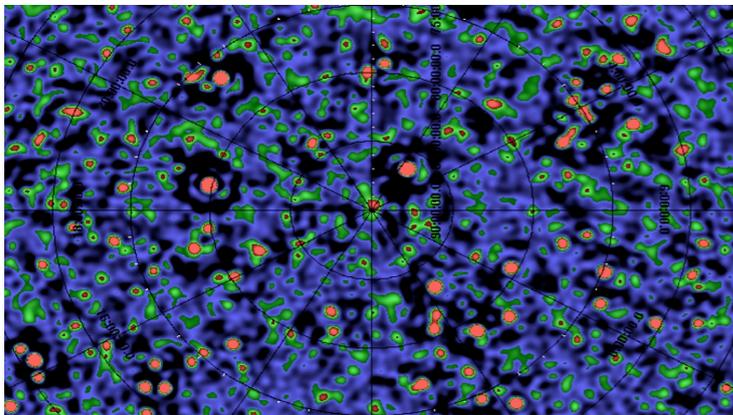
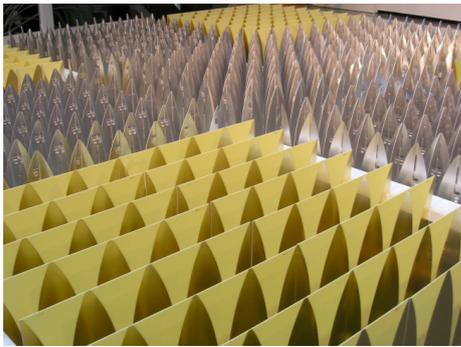
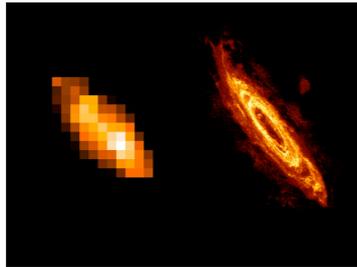
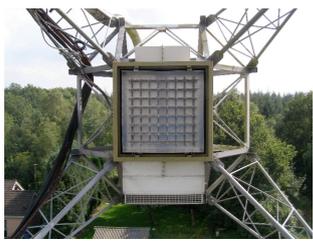
# LOFAR Sensor network



# The future: Square Kilometre Array



# ASTRON's SKA Technology Programme

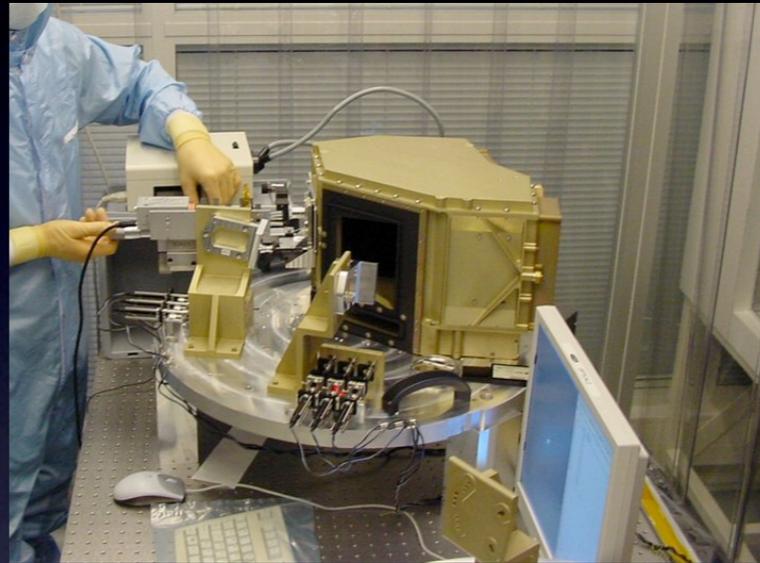
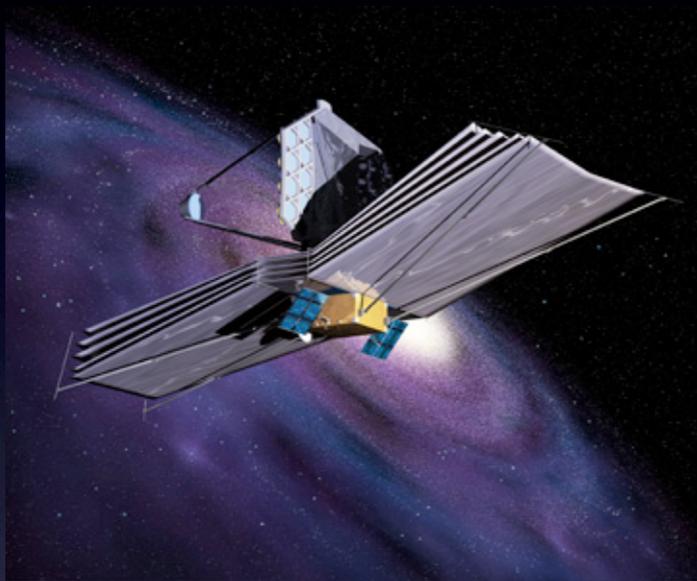


ENS=EMBRACE Next Step  
AAVS =Aperture Array Verification System

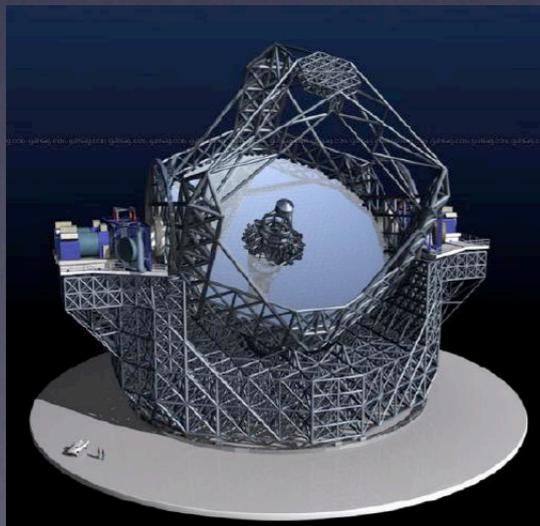


# ASTRON hosts NOVA Optical Lab

- Building instruments for spacecraft:



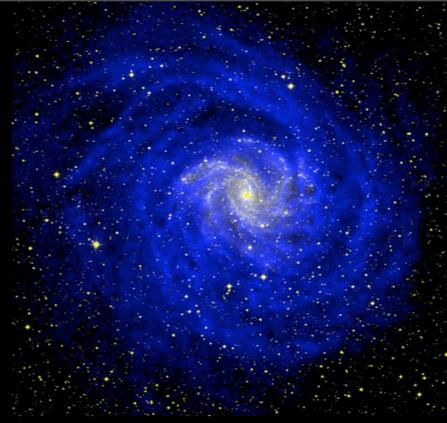
- Building instruments for ESO:



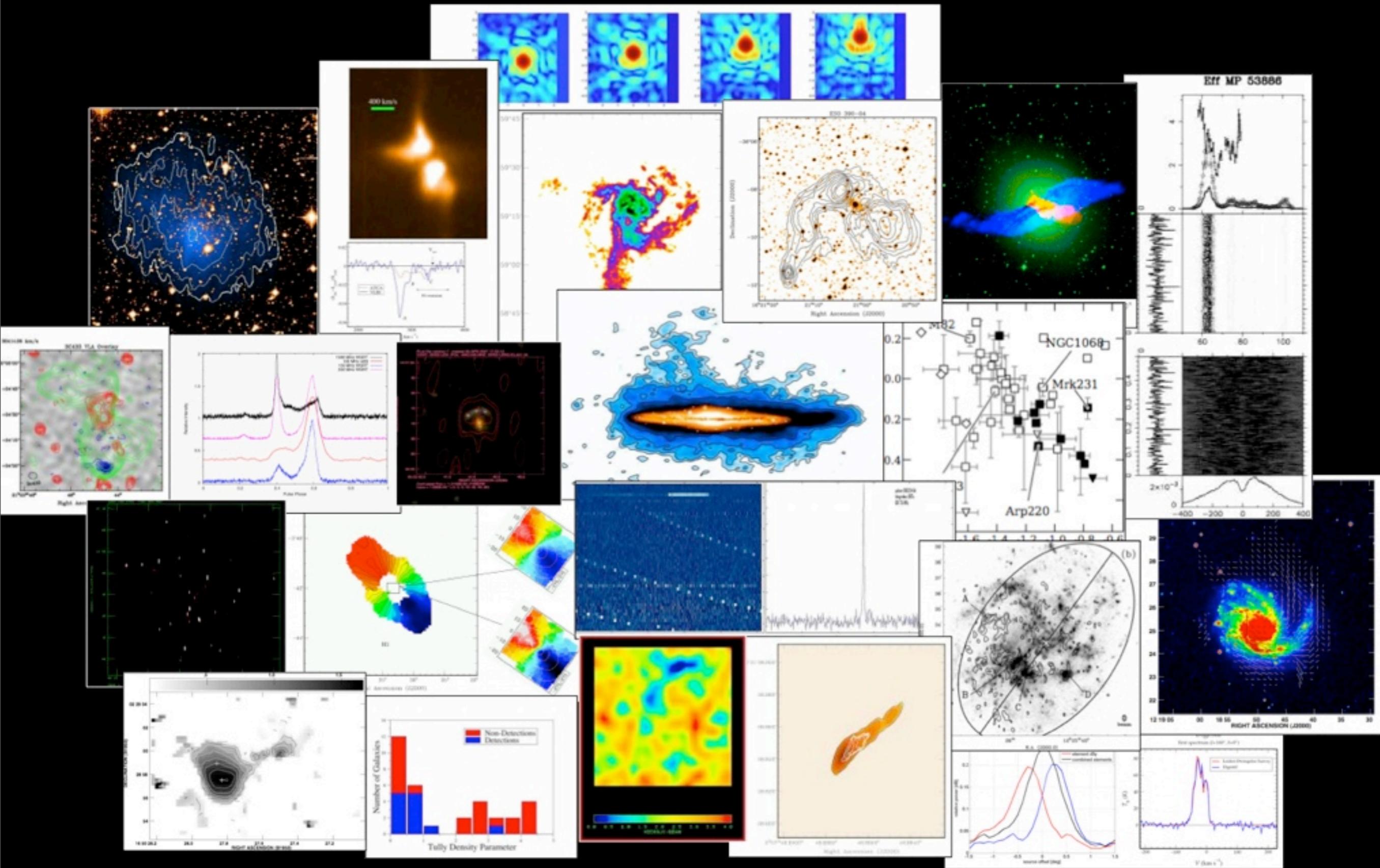
# ASTRON hosts JIVE



# Astronomy Group



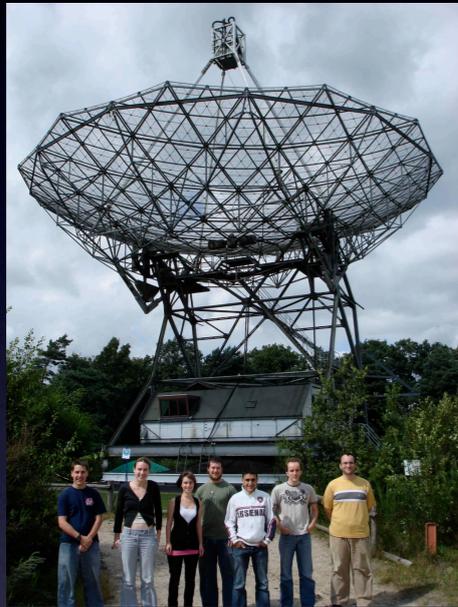
- Will double in size to at least 20 people
- Recently appointed staff:
  - Transients, PSRs (Joeri van Leeuwen, Jason Hessels)
  - Magnetic fields (Marijke Haverkorn)
- Staff active in many different research areas: EoR, local HI studies/surveys; HI abs; deep cont. surveys; lensing; GRBs/SNe; starforming galaxies; AGN etc.



<http://www.astron.nl/p/astroReport2007.html>

# Useful to know...

- Summer student & Female visitor programme:



- New Science Support Visitors room; excellent guest accomodation



Please visit us!



- **R&D:**

- **Role:**

- **design, build & integrate innovative instruments and software for radio astronomy,**
- **research programme in emerging technologies,**
- **technology transfer (to market place)**
- **crucial role in LOFAR**

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