

## Announcement of Opportunities for Early Access

# International LOFAR Telescope: a broad common-user Observatory



- ILT aims at maximal, long-term overall scientific output
  - National consortia participate: International Astronomy Consortium
  - Integrated operations via ASTRON/Radio Observatory
  - Intensive partnership with user groups
- Substantial contributions are rewarded with privileged access
  - National contributions will be rewarded with reserved access
  - International contributions will be fully realised
- Many individual user groups
  - Each focusing on maximal yield in their specific research topic(s)
  - In individual collaborations that fit specific science and style
- An Open Skies portion

- 3-tiered allocation mechanism with pre-arranged fractions to various communities and "rights holders"
  - Contributors (recognises past and present contributions)
    - chiefly the KSP groups & (international) station owners
    - consolidated in national consortia
    - will be assured of a high fraction initially (80% in 2010 ?)
    - but will find their reserved share dwindling in later years
  - Operators (rewards sustained operational involvement)
    - Significant, slowly rising fraction (10-35% ?)
  - Open Skies (open to all including KSPs)
    - Starts modestly (10% avg 2010?) and on shared risks basis
      - Minimum based on RadioNet FP7 TNA commitment:
        - 2009 - 46 hours
        - 2010 - 121 hours
        - 2011 - 244 hours
    - Will rise rapidly (Vision: in 5 years to 65%?)
    - Future Open time will be reviewed in 2010/11
    - Will have minor impact to commitments to international partners.

# Sponsoring through National Consortia

Under IWG discussion:

- Rights accumulated by National Consortia:
  - Contributions of all adhering members added (“contributors” and “operators”)
- National Consortia then distribute their acquired rights:
  - To any/all of their selected (large) projects
  - Well suited for projects with cross-national membership !
- Scientists are free to set up projects and collaborations for maximal efficiency:
  - Propose per project, with relevant group of collaborators
  - Seek collaborations for greater observing efficiency
  - Large projects may obtain (multiple) national sponsorships
  - (Initially) (smaller) projects use Open Time

# Special Initial Announcement of Opportunity: Dual Purpose

- Stimulate and organise community-wide participation in astronomical commissioning period
  - Modestly sized shared-risks projects
  - Starting towards end 2009 or in the first half of 2010.
  
- Start project review and allocation of resources for Reserved Access shares
  - Novel telescope. Census needed of range of:
    - Specific science goals envisaged
    - Detailed observing resources desired
  - Offer timely feedback on appropriate scopes and scales
  - Allow revised proposals prior to any allocations for the operational period

# The first Announcement of Opportunity for LOFAR observing

- <http://www.astron.nl/radio-observatory/astronomers/requesting-observations-and-data/lofar-announcement-opportunities-earl>

## **LOFAR Announcement of Opportunities for Early Access:**

### **Participation in Commissioning & Scoping Out Reserved Access**

**Submission Deadline 30 September 2009**

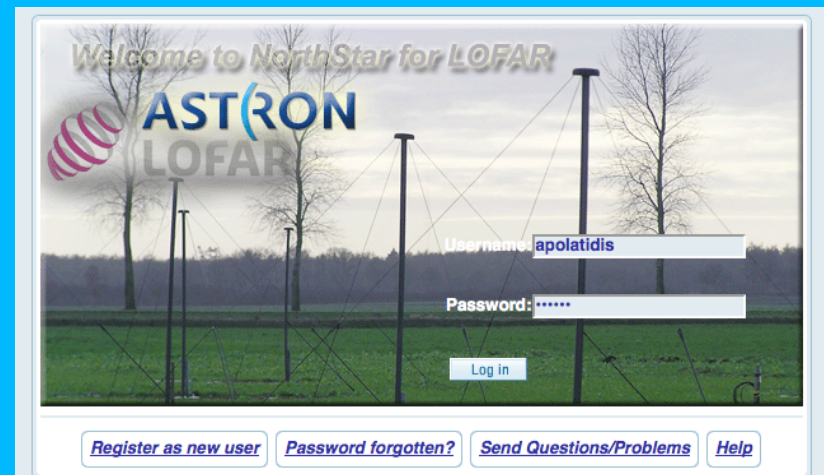
LOFAR is a revolutionary new telescope that opens up largely unexplored windows to the world's astronomical community, by covering the radio frequency ranges 10-90 MHz and 110-250 MHz with unprecedented sensitivity and angular, spectral, and temporal resolution. It is a highly flexible, all-electronic telescope of phased-array antenna stations, making use of powerful (super)computer processing and (partially Grid-based) data storage facilities. LOFAR has synthesis imaging modes as well as all-sky transient monitoring and event buffering capabilities; station beam data can also be used separately or in coherent and incoherent combinations. LOFAR will carry out large surveys and allow significant use of archival data. Further information on its capabilities is available [online](#).

# The first Announcement of Opportunity for LOFAR observing

Released on July 10.

- Submission deadline in 30 September 2009
- Period starts in late 2009, runs well into 2010
- Proposals can be for specific stages of operational readiness
- Online documentation on ASTRON/RO website (<http://www.astron.nl/radio-observatory/astronomers/lofar-astronomers>)
  - Configuration, basic principles, basic modes & numbers
- Proposals will be submitted with the “Northstar for LOFAR” web tool.

<http://lofar.proposal.astron.nl/>



# Allocation of Observing Resources

- Traditionally: Allocation of Telescope Time
- Additional aspects and resources for LOFAR include:
  - Instantaneous bandwidth
  - Instantaneous beams
  - Data transport capacity
  - Data processing capacity
  - Data storage capacity
  - Interrupt privileges
  - Piggyback privileges
  - Archive processing, proprietary rights
  - Support scientist, data analyst, or operator assistance
- Scarce/distinct resources to be allocated:
  - Telescope time, i.e. opportunity to determine setup/configuration
  - Data storage capacity and throughput
  - (Post)processing capacity and throughput
  - Access privileges to data / archive access, for specific science purposes



# Announcement of Opportunity for LOFAR Category I proposals:



- AIM: Construct a package of astronomical commissioning observations that lasts 9-12 months, and starts late in 2009. Open to expert individuals and teams (from eg. Key Science areas).

## SHARED RISK - MODEST SIZE ( $\ll 100$ hrs)

- "RISK": Uncertainty about how long it will take to carry out the package, and, towards the end, more uncertainty on the sequence it will be done, or whether things need to be dropped or added.
- "RISK": as modes will come into operations 1-by-1, some commissioning work will continue even after 9-12 months. We expect that there will be a new call, if appropriate, in mid-2010 or so, along with a call for the first operational period with the first operational capabilities / modes (that will be a subset of the final ones).
- "RISK": If conflict with KSPs then KSPs will be preferred.
- Active participation (ie in person) will be asked from proposers.
- Participants will have to obey the publication rules (list of Builders) and proprietary period

# Announcement of Opportunity for LOFAR Category I proposals:

- Testing and further developing LOFAR observational modes
- Using limited, initially unproven LOFAR capabilities for tests and demonstrations on targets of exceptional interest
- Pilot preparations for future (large) science projects
  
- Reviewed by Programme Committee on commissioning aspects as well as on science value (in consultation with LAD/RO).
- Will be scheduled in consultation with RO, will be performed with collaboration with engineers so issues will be addressed to.
- Requested: best estimate of observing time, observing and processing resources.
- May require re-iteration on instrument performance, capabilities requirements as part of the review process and later.

# Announcement of Opportunity: Category II Proposals

- AIM: Make a census of projects/proposals that will be eligible for **reserved access** through the national consortia
- Early start of large proposal allocation process
  - No allocations for operational period made yet
  - Full project specifics: science, observing & analysis plans
  - For all intended large projects the steps (pilots, initial science) are to be framed in the context of the projects to run in the first few operational years
  - Find range of specific planned science and pressures on resources
  - Allows iteration: equitable balance & realistic expectations
    - Bottlenecks w.r.t. resources
    - Specific large science projects tackled by specific groups
- Feedback from Programme Committee will be useful for first full call for proposals (2010)

# Programme Committee assessment for all

## Single, independent Programme Committee

- Composed of independent international experts
- Uniform assessment of all projects
  - Scientific merit
  - Technical feasibility
  - Project plan: timelines, people, data analysis resources
  - Scope, focus, demarcation
    - Cannot “reserve” technique, sky area, “umbrella science”,...
    - Piggy-back & archive use allowed/encouraged
  - Suitability for privileged (“large programme”) support
- All groups can then tune and focus their large-scale projects without losing any observing opportunities

- Overall science output from the LOFAR Observatory will benefit from:
  - Breadth of the user community
  - Healthy competition
  - Focused research carried out by dedicated research groups
  - Coordinated and broad participation in commissioning
  
- Astronomers should set up project scope and collaborations in the way that best suits science, interests, style of work, and the finite amount of their time and of telescope resources
  - Within a large conglomerate or with a small group or on their own
  - A grand-design programme or a very focused project
  - Requesting observing time or data access rights

Watch progress via [www.astron.nl](http://www.astron.nl)

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