GMVA
Overview

GMVA – Organising/Logistics

The GMVA is organised by the MPIfR in Bonn

Webpage:
http://www3.mpifr-bonn.mpg.de/div/vlbi/globalmm/

The GMVA is an open-access network

1990s – 2002 CMVA (Haystack)

Since 2003 GMVA

GMVA components

- The GMVA consortium made up of the participating observatories

- Program committees of the participating observatories

- Network scheduler

- Person who creates block VEX schedule

- Friends of VLBI at the telescopes

- Bonn correlator

The Global Millimeter VLBI Array (GMVA)

Imaging with ~45 μas resolution at 86 GHz

Baseline Sensitivities

in Europe:

30 – 250 mJy

in US with GBT:

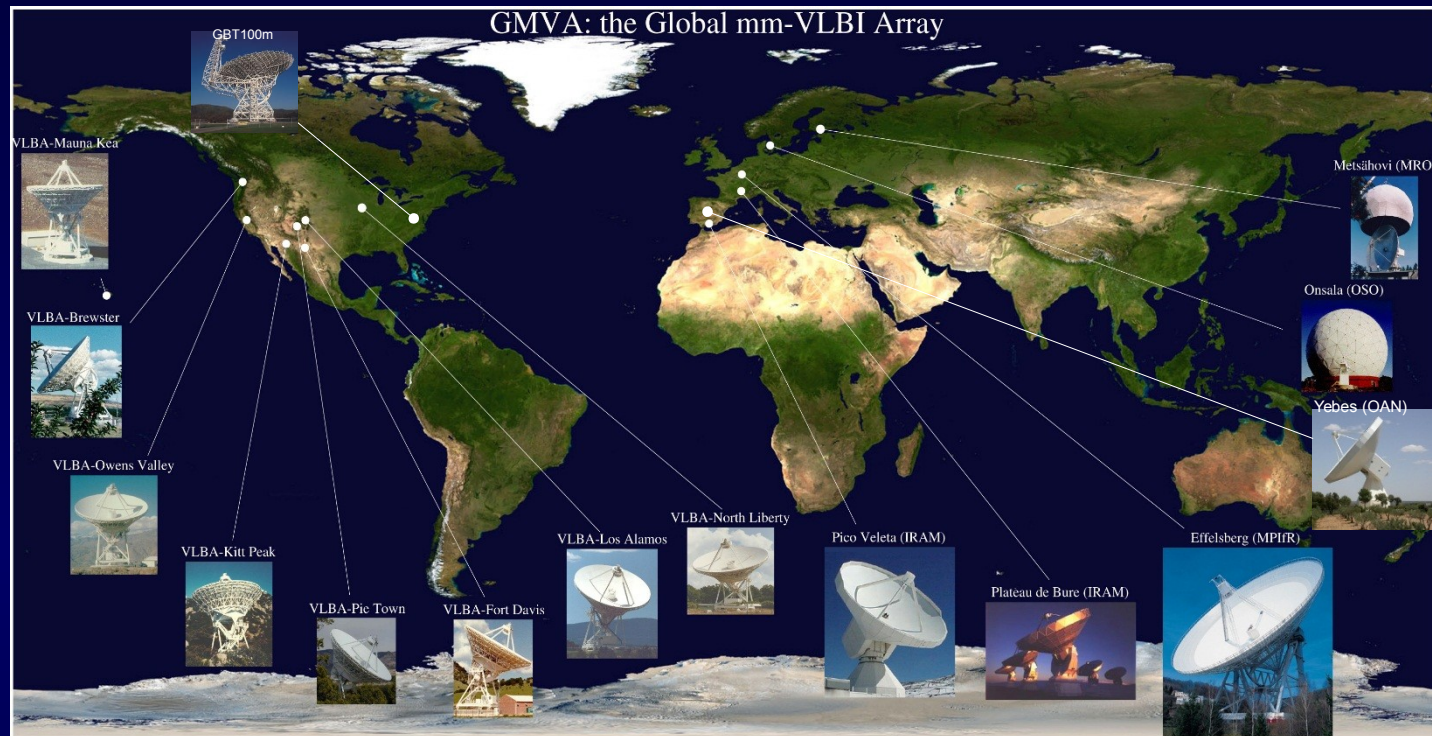50 – 250 mJy

best transatlantic:

30 – 100 mJy

Array:

0.5 – 1 mJy / hr

GMVA: the Global mm-VLBI Array

http://www.mpifr-bonn.mpg.de/div/vlbi/globalmm

- Europe: Effelsberg (100m), Pico Veleta (30m), Plateau de Bure (35m), Onsala (20m), Metsähovi (14m), Yebes (40m), KVN (3 x 21m) (planned: SRT, NOEMA) Noto@7mm

- America: 8 x VLBA (25m), GBT (100m), ALMA (just commissioned) (LMT*)

Proposal deadlines: February 1st, August 1st

GMVA - Observing

- 2 sessions/year ≤ 5 days

- 2 deadlines for proposals

    – NRAO proposal submission tool

- Proposals are reviewed by consortium members

- Scheduler assigns projects

- VEX schedule made at MPIfR

    – 50% duty cycle (pointing, calibration)

GMVA – Observing 2

- VLBI friends at stations handle observing
    - MPIfR supports IRAM
- Most disks provided by MPIfR (≤600 TB)
- Disk logistics handled at MPIfR
- PFB mode 32 MHz sub-bands
    - Data-rate limited to 2 Gbps by VLBA
    - Plateau de Bure 1 Gbps
- Fringe checks before session: some stations
- Single dish calibration!

GMVA – Correlation

- DiFX

- Different width of sub-bands handled with "zoom" mode (c.f. PdB)
  - Possibly some small issues remain

- GPS for start on clock searches
  - Sources are weak at 86 GHz

- Correlated data checked with HOPS

- Data export in FITS and HOPS format

GMVA – User support

There is only limited user support.

- The schedule is made for the observers.

- Observing and correlation are done in absentia.

- Amplitude calibration data is checked for its quality and consistency.

- Further user support is possible on the basis of collaborations.

GMVA – Funding

- All telescopes and MPIfR are funded to do VLBI by their funding agencies.

- Telescopes pay for sending modules back to the correlator.

- MPIfR funds most disk modules and in some cases the disk shipment to the stations.

- MPIfR funds the correlation and other supporting activities.

GMVA – Future

- First call for GMVA + ALMA is out

    - Mark 6 recording at ALMA

    - Different observing mode (backends)

- Improve calibration → calibration transfer

More later......