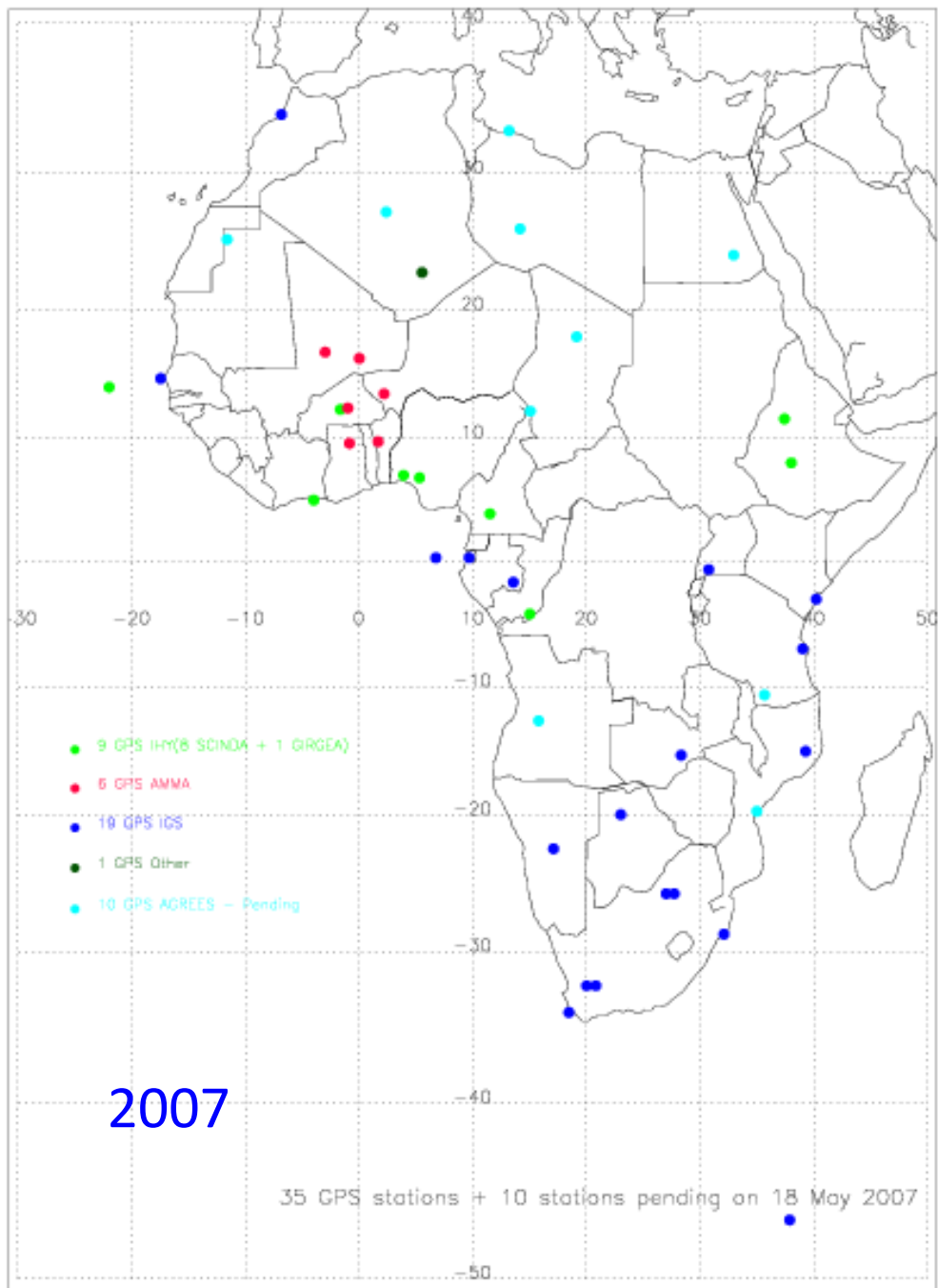


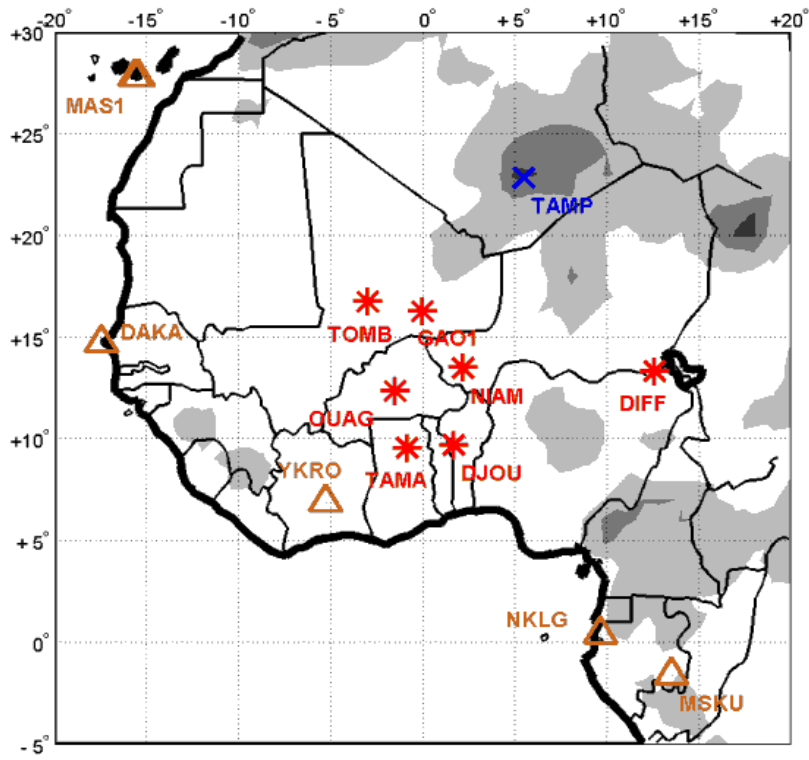


GPS in AFRICA

IHY to ISWI

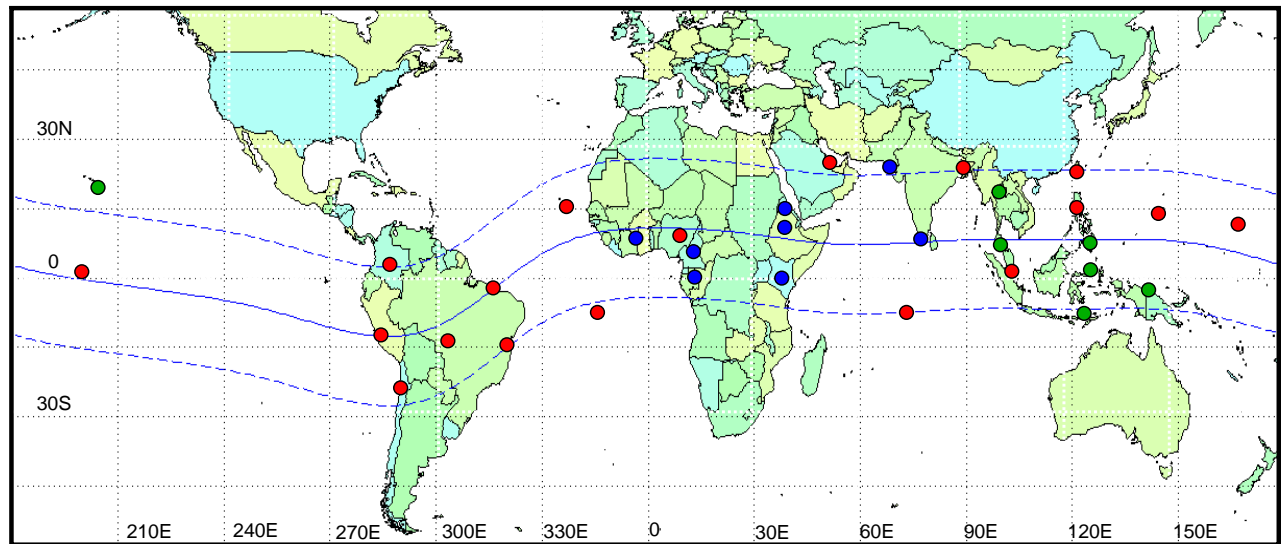






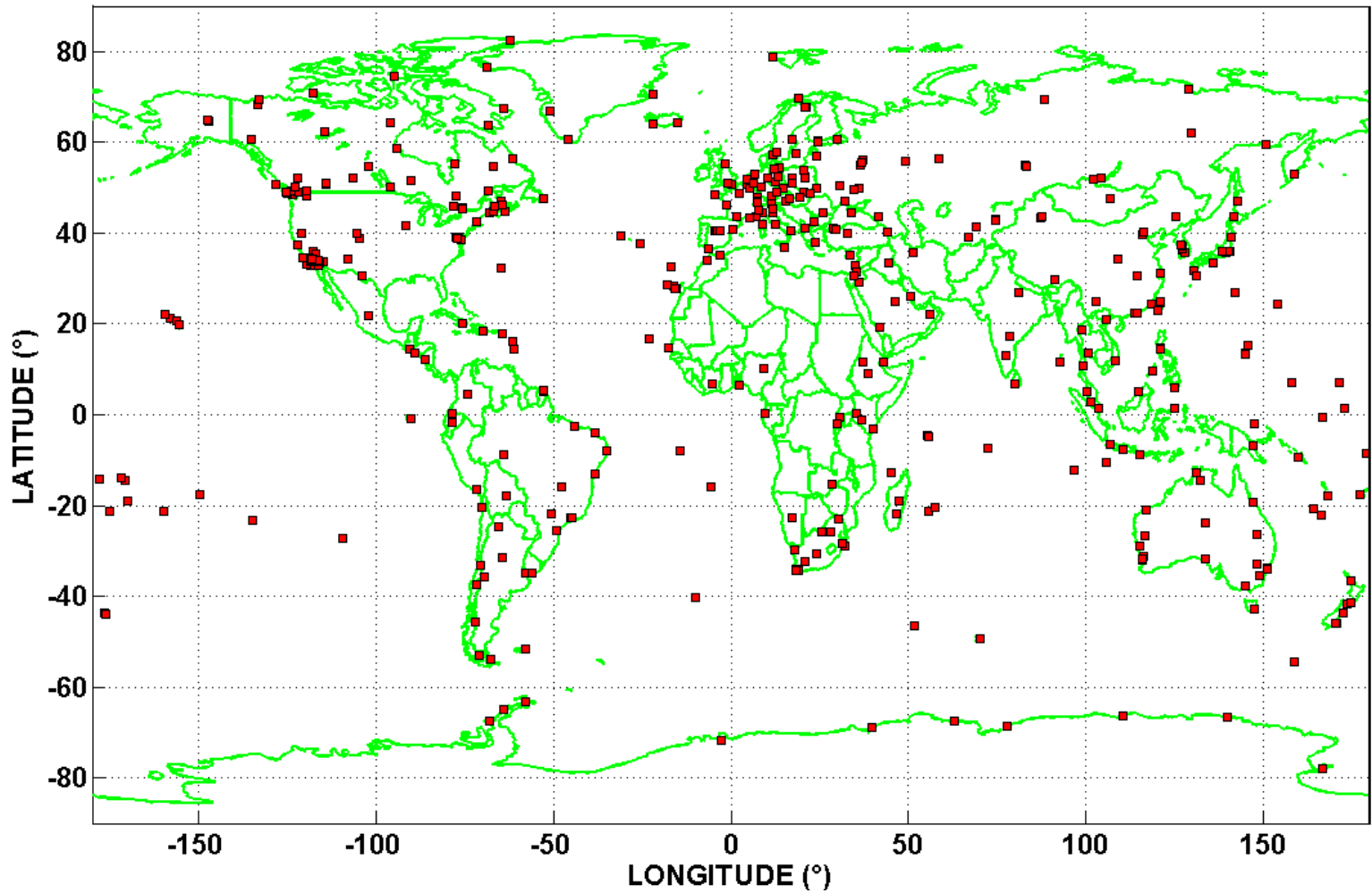
AMMA network => now in IGS

SCINDA network => Keith Groves



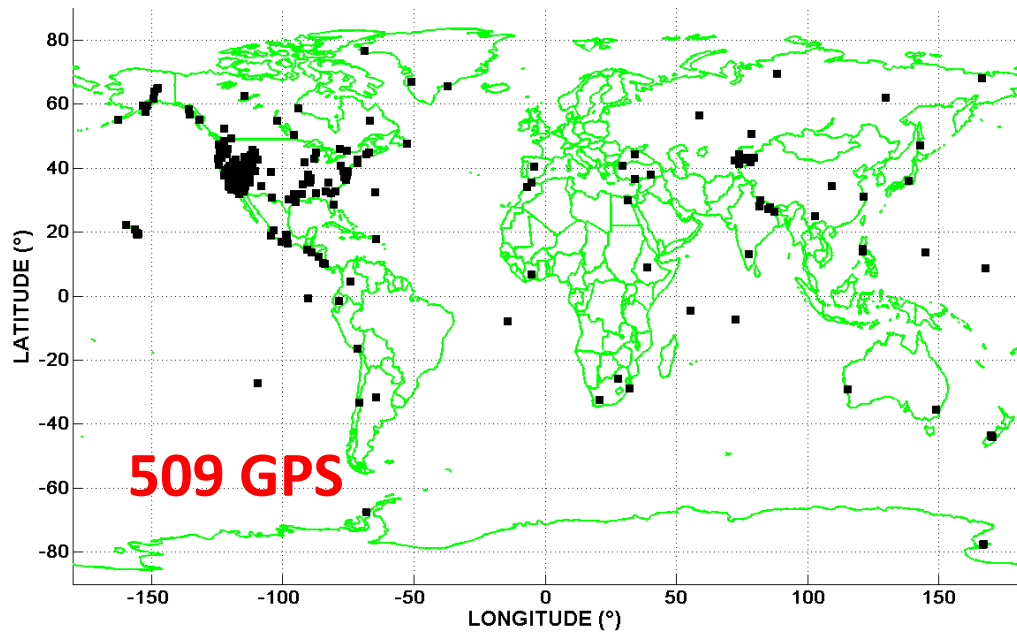
● Existing Sites ● UN IHY Sites ● Other/collaboration

IGS NETWORK (01/12/2016)



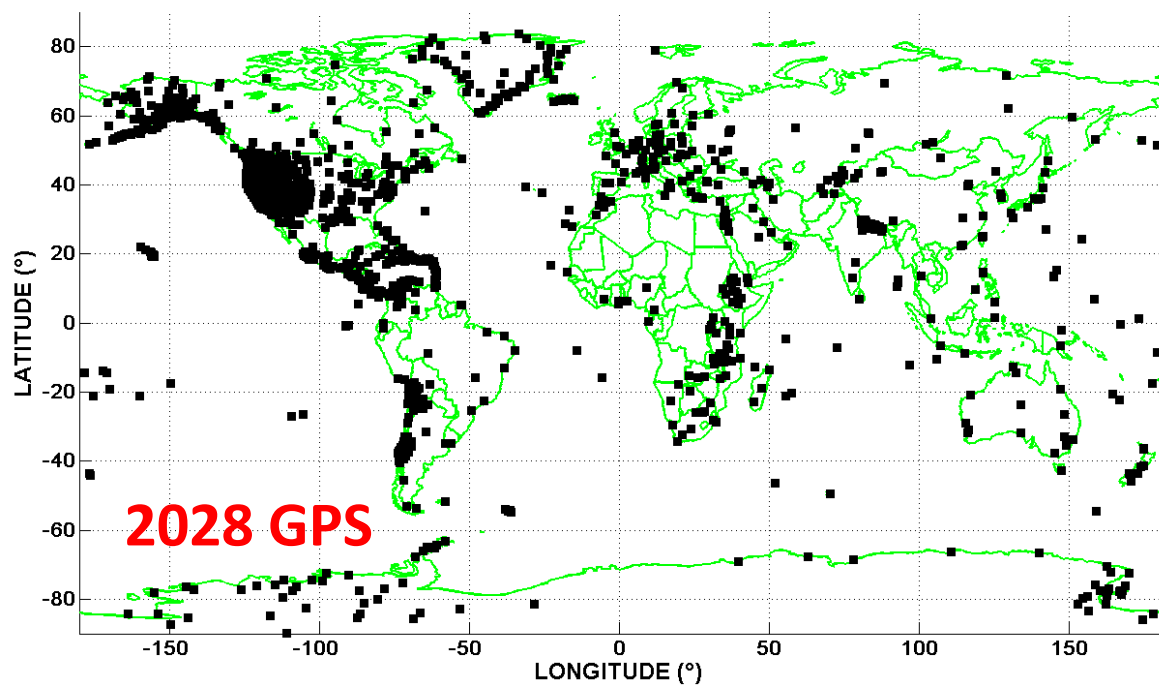
Increase of GPS stations in AFRICA with the IGS network

UNAVCO/2000



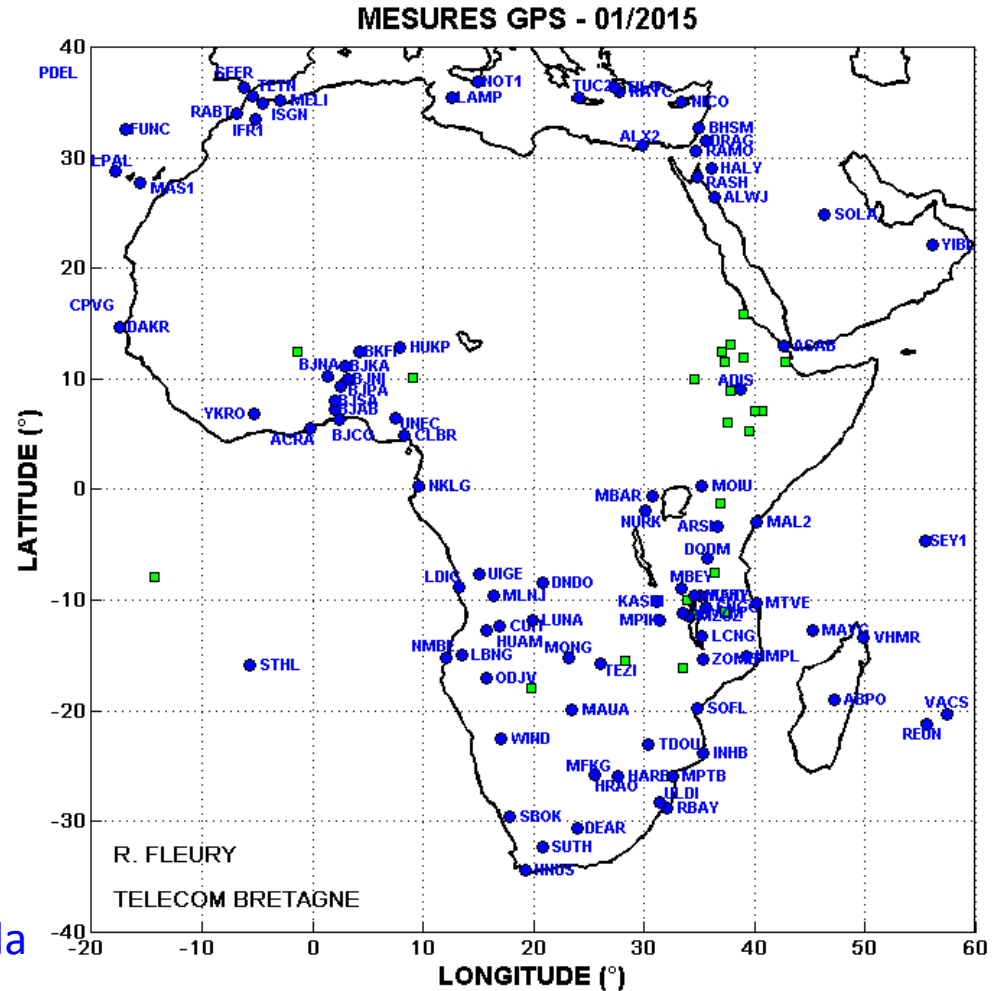
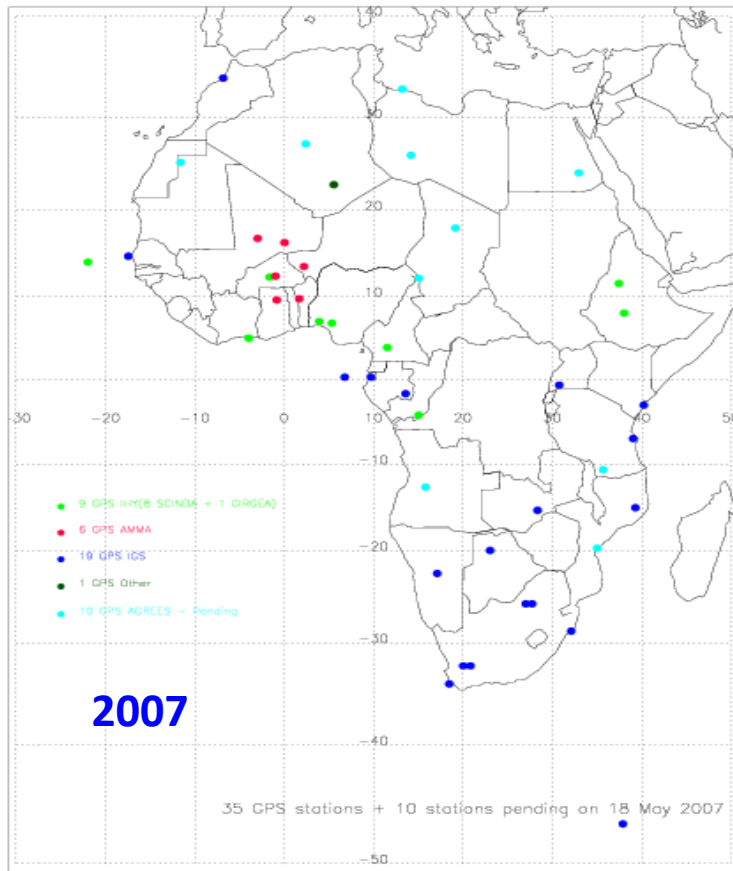
Increase of GPS with UNAVCO

UNAVCO/2015



Available on the web

The data of Benin and Nigeria are available on the web



From 30 to 120 GPS free on the web

Many other networks

Algeria, Burkina Faso, South Africa, Rwanda

Etc...



GNSS Websites with free data for Training

About RINEX format:

<ftp://igs.org/pub/data/format/>

Hatanaka Format Information at UNAVCO <https://www.unavco.org/data/gps-gnss/hatanaka/hatanaka.html>

IGS network:

<http://www.igs.org/about/data-centers>

CDDIS (USA)

- 1992-now:

<ftp://cddis.gsfc.nasa.gov/gnss/data/daily/>

SOPAC (USA)

- 1988-now:

<ftp://garner.ucsd.edu/pub/rinex/>

CORS

<ftp://www.ngs.noaa.gov/cors/rinex/>

<ftp://alt.ngs.noaa.gov/cors/rinex/>

GARNER

<ftp://garner.ucsd.edu/pub/rinex/yyyy/doy/file>

<ftp://garner.ucsd.edu/rinex/>

IGN (France)

- 1990-now:

<ftp://igs.ensg.eu/pub/igs/data/>

KASI (South Korea)

- 1993-now:

<ftp://nfs.kasi.re.kr/gps/data/daily/>

BKG (Germany)

- 1991-now:

<ftp://igs.bkg.bund.de/IGS/obs/C>

China

- 1990-now:

<ftp://igs.gnsswhu.cn/pub/gps/data/daily/>

UNAVCO (USA)

- 1992-now:

<ftp://data-out.unavco.org/pub/rinex/obs/>

EUREF

<ftp://igs.bkg.bund.de/EUREF/obs/> *specific website*

AFREF (South Africa) - 2004-now:

<ftp://ftp.afrefdata.org/> *only stations in Africa*

SONEL

<ftp://ftp.sonel.org/gps/data/>

MGEX Campaign

<ftp://igs.ign.fr/pub/igs/data/campaign/mgex/daily/rinex3/>

AuScope (Australia) - 1993-now:

<ftp://ftp.ga.gov.au/geodesy-outgoing/gnss/data/daily/> *stations in Australia and Pacific*

TIGA

- 1990-now:

<ftp://ftp.sonel.org/gps/data/> *stations near sea*

NOAA

- 1994-now:

<ftp://geodesy.noaa.gov/cors/rinex/> *stations mainly in the USA*

IONEX (MAPS)

<ftp://cddis.gsfc.nasa.gov/gps/products/ionex/>

<ftp://ftp.unibe.ch/aiub/CODE/>

<http://mycoordinates.org/> Space Weather, From the Sun to the Earth : the key role of GNSS (Part 1: February, Part 2: March)

TRAINING ON GPS : ICTP (Italy), Boston College (USA), National School of Telecommunications (France), CRASTE-LF (UN-Morocco)

FUTURE : GNSS in AFRICA => Babatunde Rabiou and AGS

DELOYEMENT OF GNSS RECEIVERS

GPS => GNSS for Research and applications

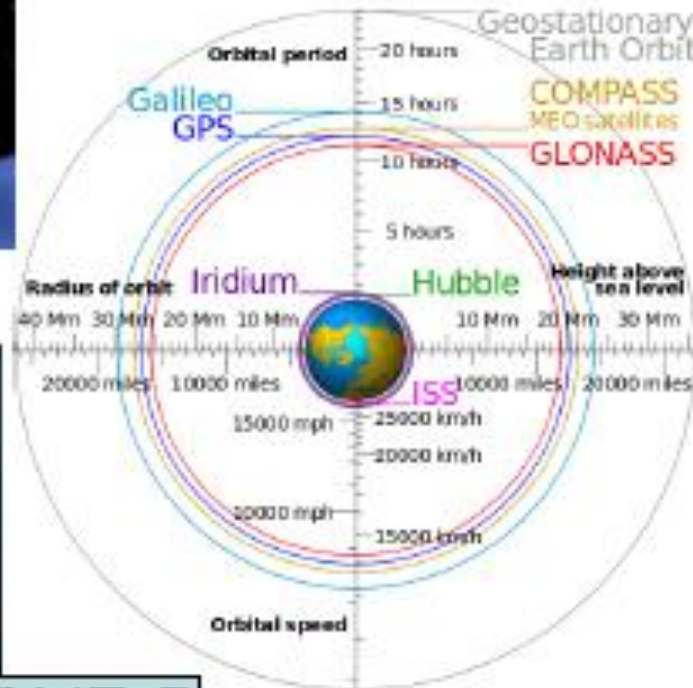


GPS IIR

GLONASS K1



GIOVE-B



BEIDOU