



## **Reflection on past year, towards IISGEO**

Students | World-Class Space Geodesy and Earth Observation Facility | Tertiary  
Institution Training Hub | Scientific Excellence

*Working towards the establishment of a new Space Geodesy  
Observatory for South Africa*

2<sup>nd</sup> Space Geodesy Workshop  
Matjiesfontein,  
12-15 November 2007

Ludwig Combrinck, HartRAO



# The Main Achievements

## *Five Key Focus Areas*



- ***Project visibility***
  - Interaction with DST through meetings
  - International workshops, White Paper v3.0
  - Web site soon, IISGEO.org
- ***Funding***
  - Received start-up funding from NRF STAF (R2 M and Inkaba yeAfrica R0.74 M)
- ***Instrumentation***
  - OCA telescope to be shipped mid-Feb 2008
  - Several additional GNSS installations
- ***Partners and collaborators***
  - Univ of Pretoria, UNISA, NLC & NRE (CSIR), OCA (France), NASA (USA), Univ of Beira Interior (Portugal), GFZ (Germany), KACST (Saudi Arabia)
- ***Students***
  - Currently 3 PhD students, need more

# GNSS/Tide gauge network

*Improvement in station distribution*



- Rodrigues Island (Mauritius), Portugal + South Africa + Mauritius
- Mocambique (Two+!) Portugal + South Africa + Mocambique
- Marion Island (GNSS+tide gauge, Sat link), South Africa + Germany
- Funding received for more via IyA (Attie's talk), Madagascar, DRC, Matjiesfontein, Zimbabwe ++



# One metre telescope

## *Satellite/Lunar Laser Ranger for Southern Hemisphere*



- Final arrangements for transfer to South Africa completed
- Transfer and initial refurbishment/development funded
- Telescope to be shipped February 2008
- Development Laboratory at University of Pretoria

# Meaningful Capacity Development

*Strengthening local capacity through project based education*



**Create core of researchers and technologists through tertiary education**

## ***University of Pretoria:***

- **2<sup>nd</sup> and 3<sup>rd</sup> year Space Geodesy incorporated into GIS/Physical Geography courses in 2008**
- **Full Honours course in 2009**
- **Source for future MSc and PhD students in Space Science/Space Geodesy**

## ***University of South Africa:***

- **4<sup>th</sup> year Microwave engineering, Digital communications, Digital control systems, 3<sup>rd</sup> and 4<sup>th</sup> year Industrial Projects**
- **Two MTech projects 2008 (Regi and Mzi talks)**

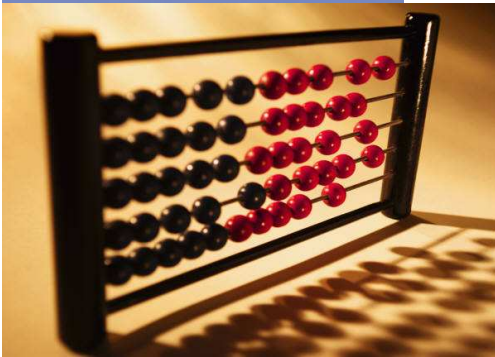
## ***Rhodes University:***

- **Joint project to investigate effect of Sun's activity on ionosphere's electron content (one PhD student)**
- **During 2008 to explore participation in IISGEO development 5**



# Continued site evaluation

## *Due dilligence*



- Counting advantages and disadvantages of ***Matjiesfontein*** as the preferred site
- RFI measurements to commence soon using SKA equipment
- MSc project (Marisa Nickola) on astronomical seeing conditions
- November 2007 further geophysical investigation and DEM (NRE, CGS, HartRAO and Dept of Lands)
- Phase 1 construction (to house GNNS, MET unit, seismometer and gravimeter) 2008

# What's next?

*More work/rough seas*



## How should we proceed from here?

- *Phase II of Inkaba yeAfrica proposal to DST before 30 November 2007*
- *Awaiting results of MTEF proposal via NRF to DST*
- *IISGEO is a subproject within IyA*
- *3.5 Million available for 2008 ( we have a share in this)*
- *Explore all avenues, e.g. bilaterals, science chairs etc.*
- *DST/NRF to complete formal tie with Matjiesfontein via MOU*

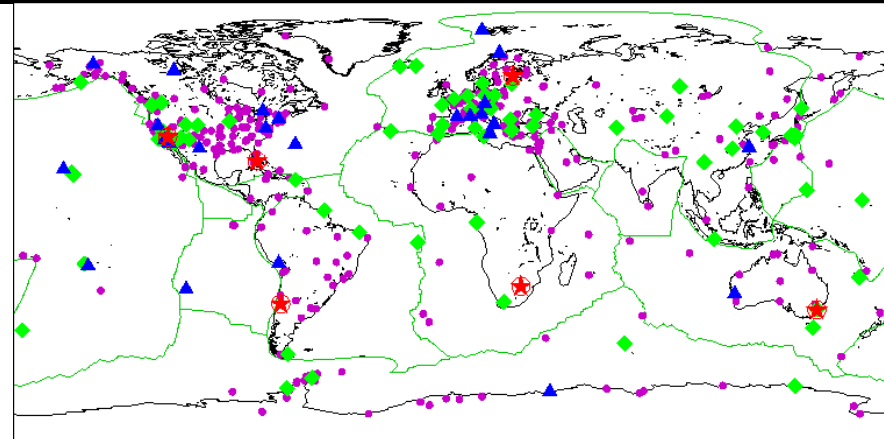
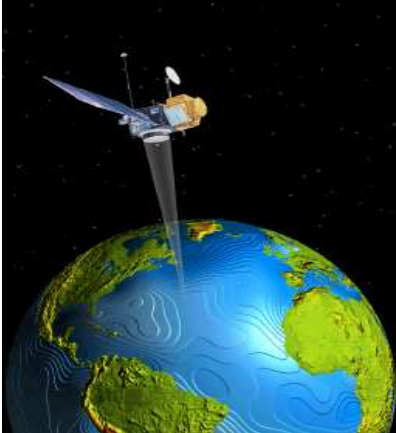
# Next 12 months



- Do more fast biking
- IISGEO establishment (IISGEO.ORG, website, DST recognised/supported project)
- Roadshow early 2008 (after Antarctica)
- Find post-graduate students
- Integrate Space Geodesy into UP
- Fund raising, funding applications
- Increase partner base
- Initial refurbishment/development on S/LLR to commence, Phase 1 instrumentation at Matjies (seismo, GNSS, MET, gravimeter, COMMS, UPS)
- SADC GNSS network expansion
- AFREF analysis/data centre
- Footprint and installation of DORIS at KACST (Saudi Arabia)



# You can be part of IISGEO



• 1 Collocated techniques > 70  
◆ 2  
▲ 3 25  
★ 4 6

***Thank You!***