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**Summary of Seismic Network at Council for
Geoscience South Africa
Presented by**

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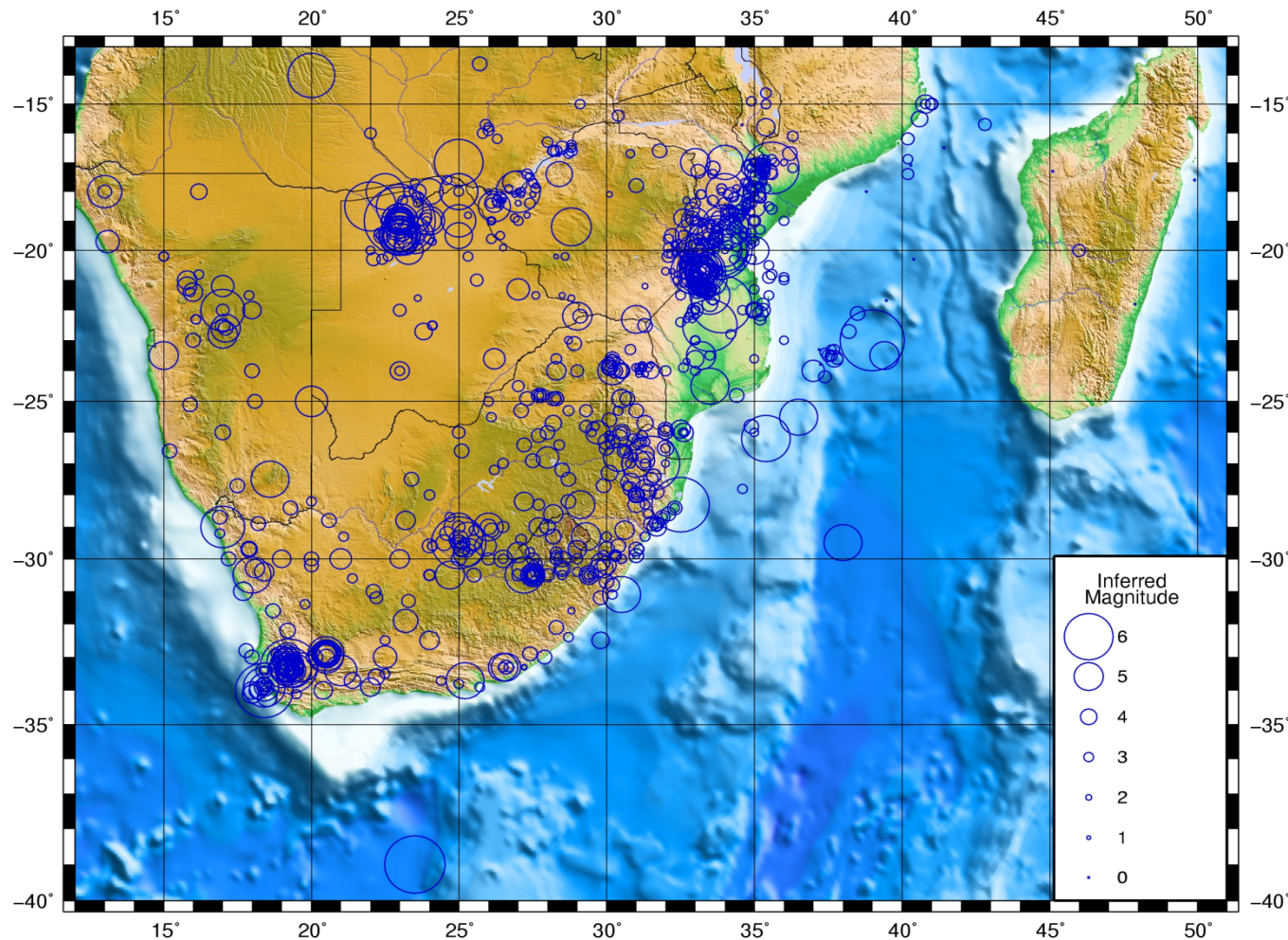
Outline

- .Tectonic (Natural) Seismicity of South Africa
- .South African National Network
- .Mine Related Seismicity of South Africa
- .Cluster Network in Johannesburg
- .Cluster Network in Carletonville
- .Cluster Network in Klerksdorp
- .Cluster Network in Augrabies
- .Our System
- .International Data Sharing



Tectonic (natural) seismicity of South Africa

HISTORICAL SEISMICITY OF SOUTHERN AFRICA



- Low to moderate seismicity (intraplate).
- Largest earthquake in 1969, MI 6.3.
- A number of natural clusters.

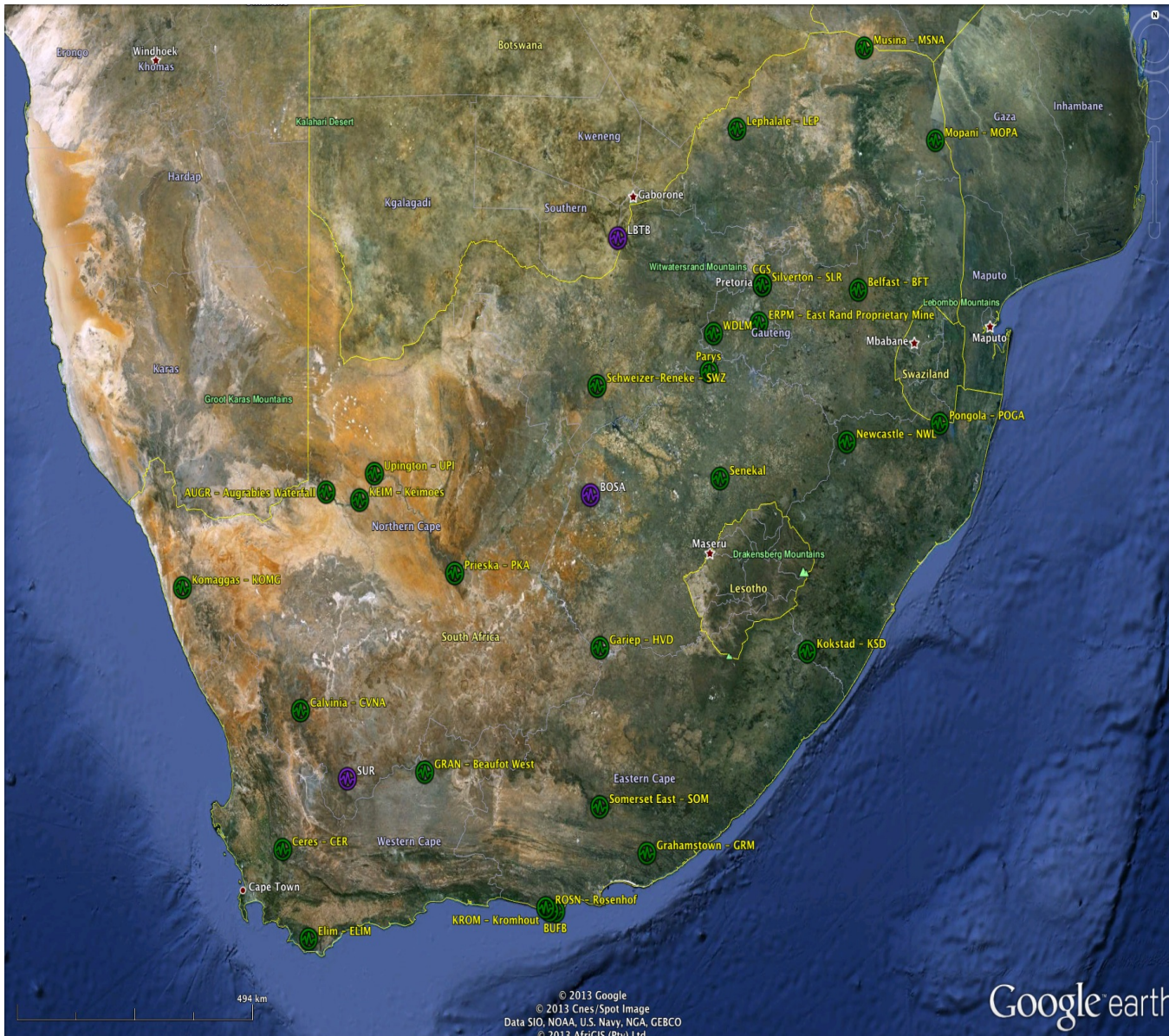


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Current monitoring with South African national network

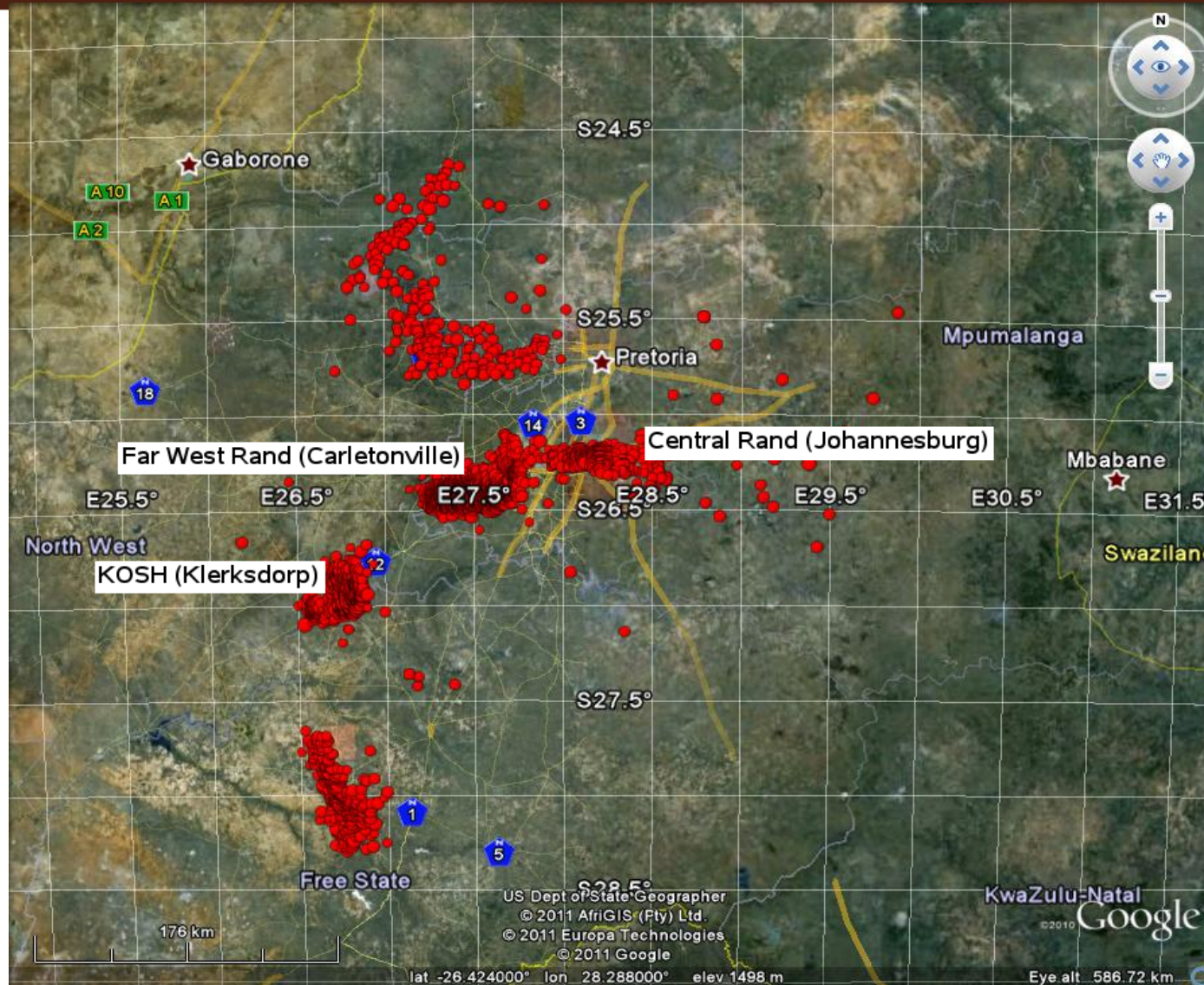


- Location accuracies of 5-10 km.
- Magnitude threshold of 2.5.
- Not useful to the cluster areas.
- 33 stations scattered throughout the country.



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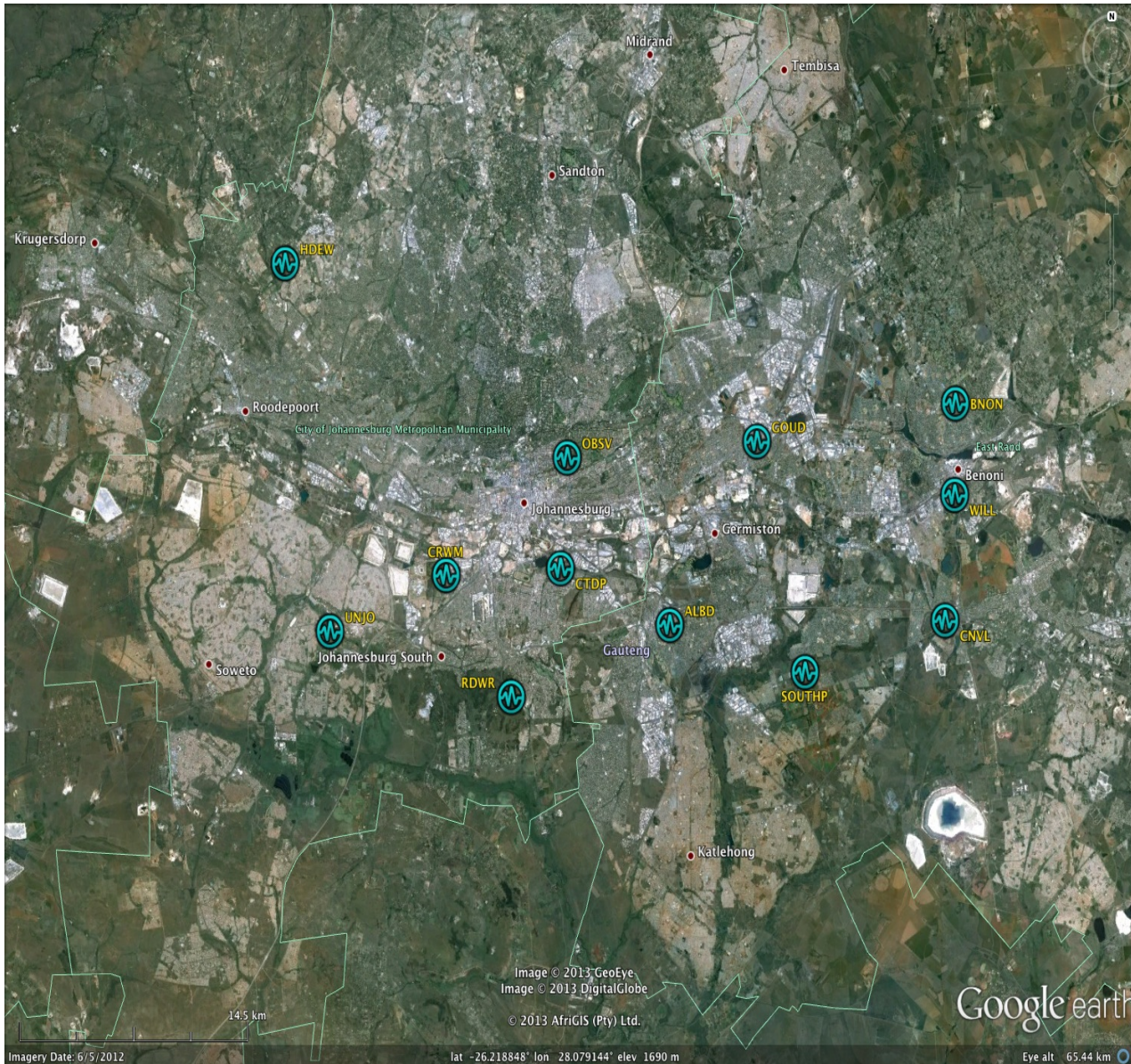
Mine-related seismicity of South Africa



- More than 80% of seismicity.
- Largest event occurred in 2005, MI 5.3.
- Clustered around the mining regions.
- Both operational and abandoned mines



Cluster network in Johannesburg

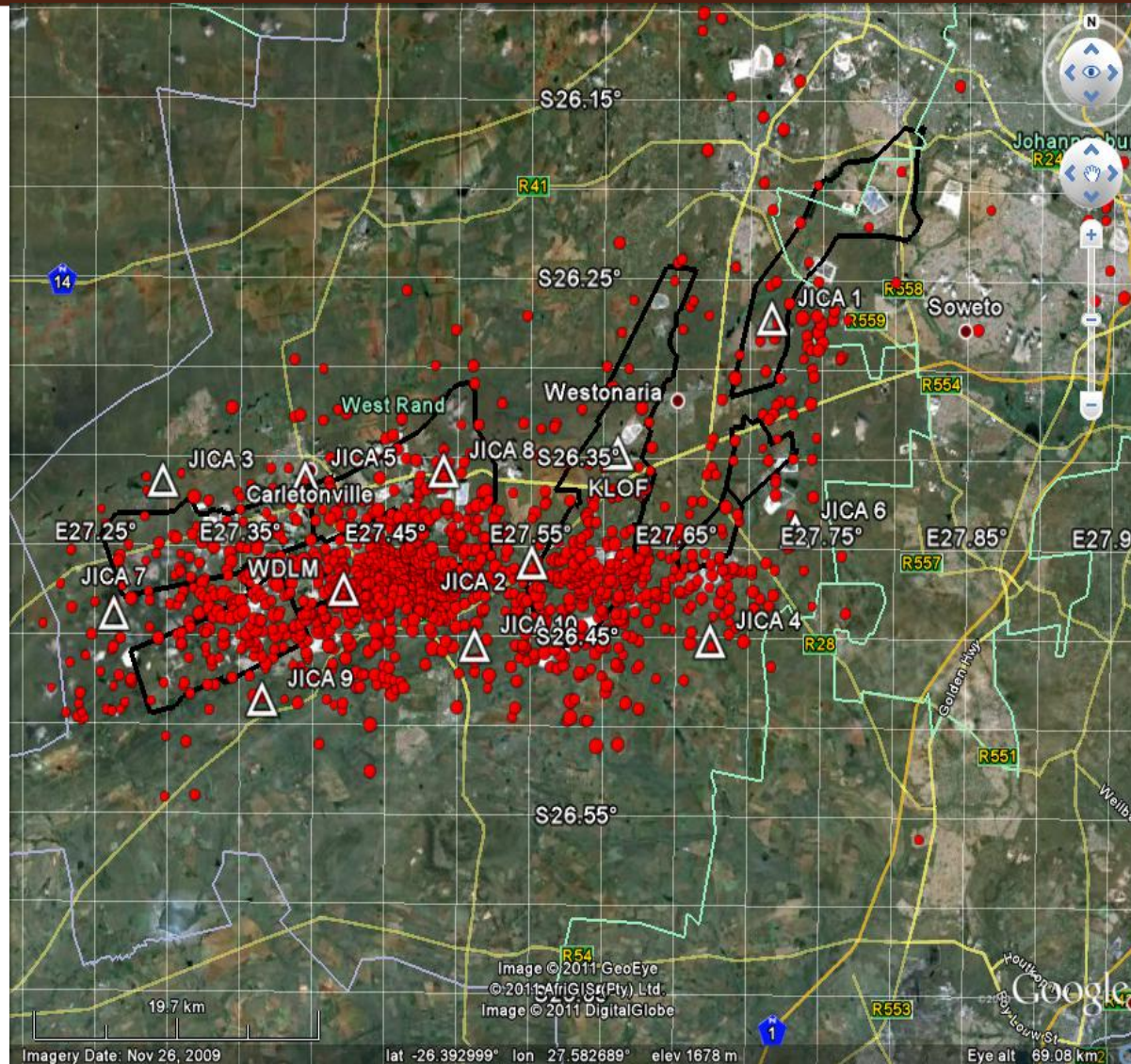


- . Abandoned mines.
- . Part of larger project investigating water ingress.
- . 12 stations.
- . Accuracy of 0.8km.
- . Magnitude threshold <1.



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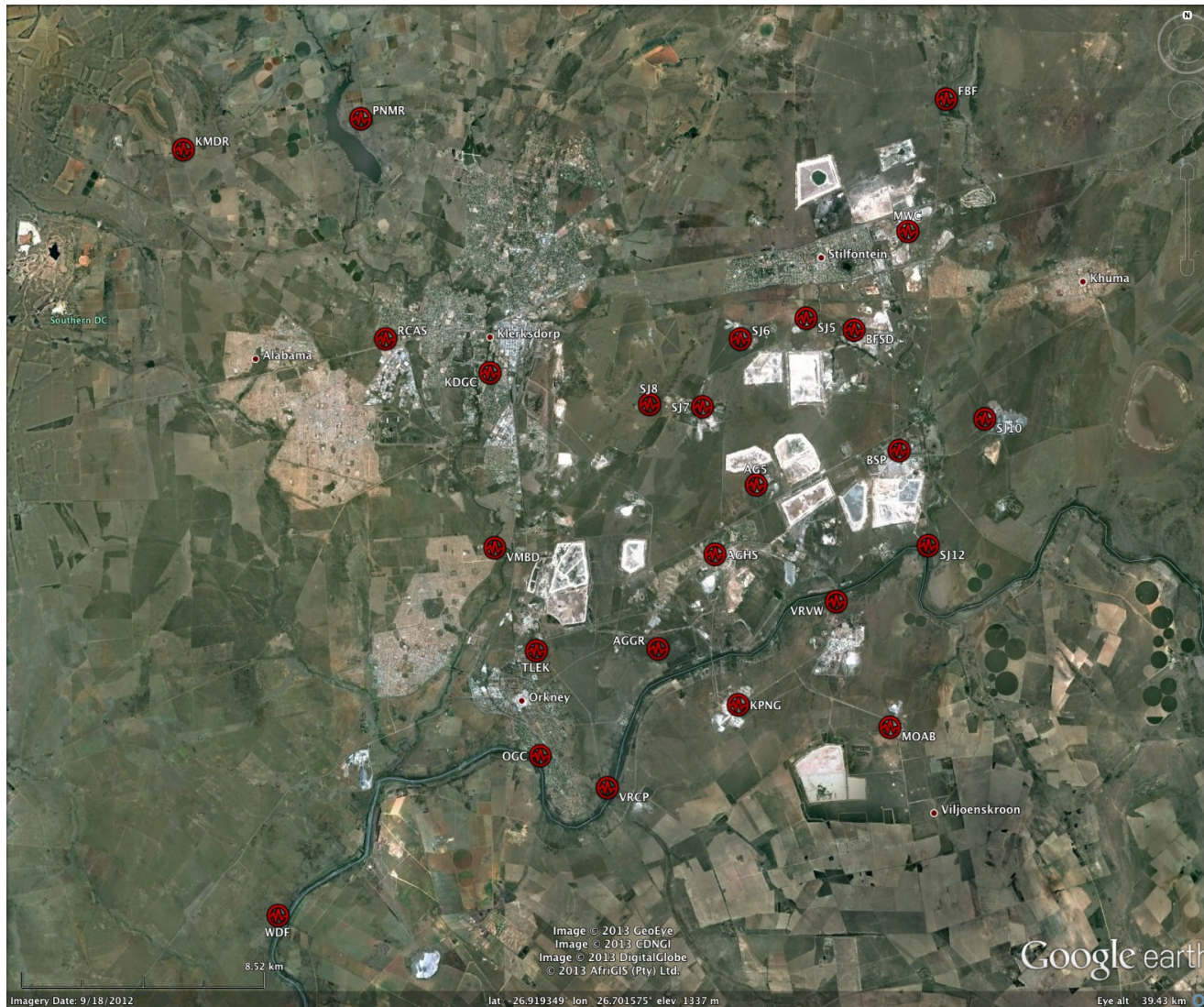
Cluster network in Carletonville



- Part of larger project with JICA.
- Both operational and abandoned mines.
- 10 stations.



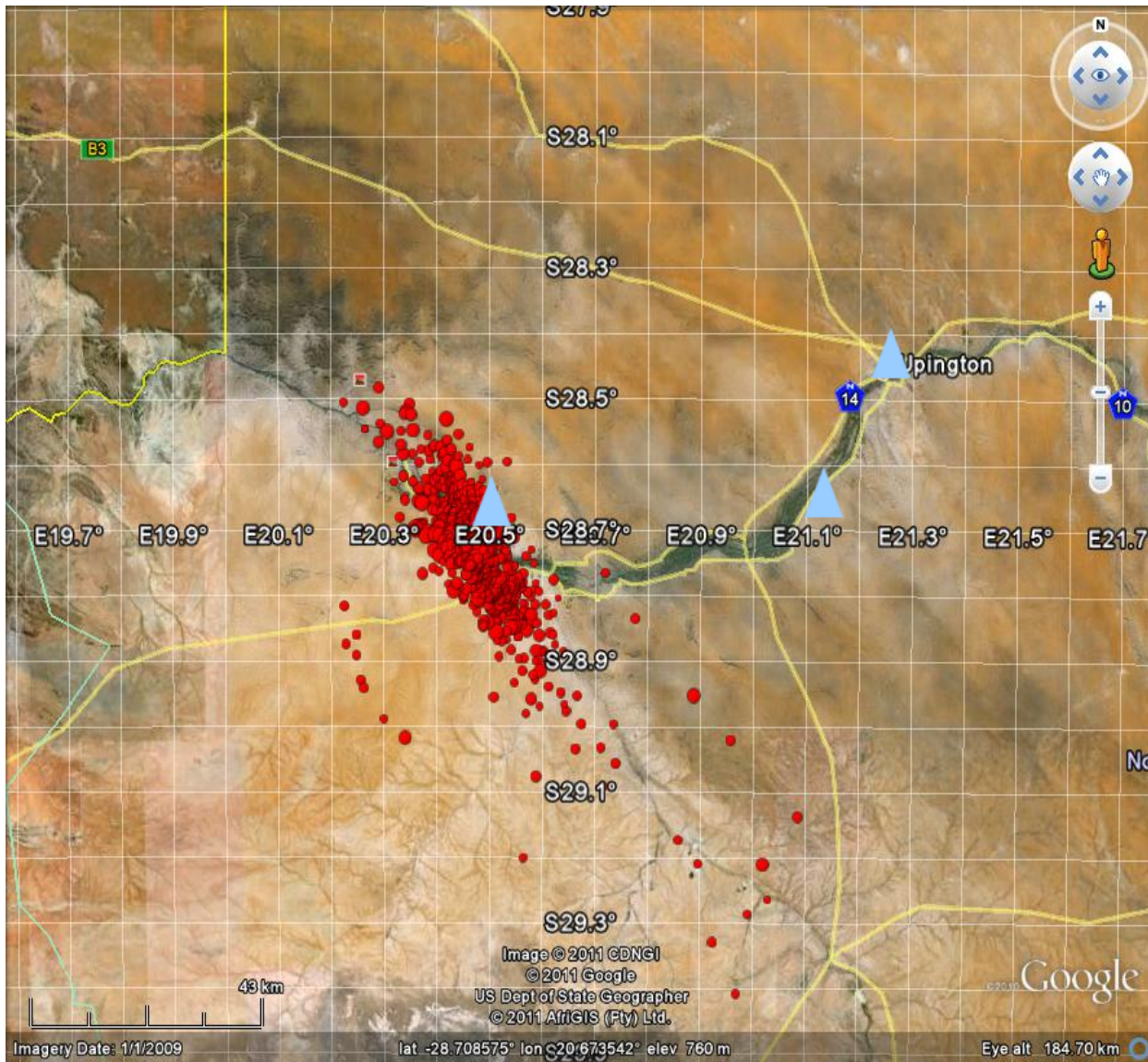
Cluster network in Klerksdorp



- . Monitors operational and abandoned mines.
- . Site of largest mine-related event (5.3).
- . 25 stations.



Cluster network in Augrabies



- . "New" natural cluster.
- . 3 stations.



Our System

·ACQUISITION / RECORDING UNITS

- Q330 & Q330S+ (Antelope)
- EARS (includes Earth Data 24bit digitizer & Seiscomp Recorders) (Seiscomp)

·SEISMOMETERS / SENSORS

- GURALP 3T
- GURALP 40T
- EPISENSORS (cluster networks)
- KS2000
- L43D (short period)

ANALYSIS

- SEISAN
- Antelope



International Data Share

INTERNATIONAL STATIONS (obtain)

- IRIS
- CTBTO
- Namibian Geological Survey
- Direcção Nacional de Geologia (DNG) – Mozambique



International Data Share Cont.

INTERNATIONAL NETWORKS (send to)

- Namibian Geological Survey
- Direcção Nacional de Geologia (DNG) – Mozambique
- CTBTO
- AfricaArray via IRIS
- Indian Ocean Tsunami Warning System (IOTWS) via GeoForschung Zentrum (GFZ)



THANK YOU



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