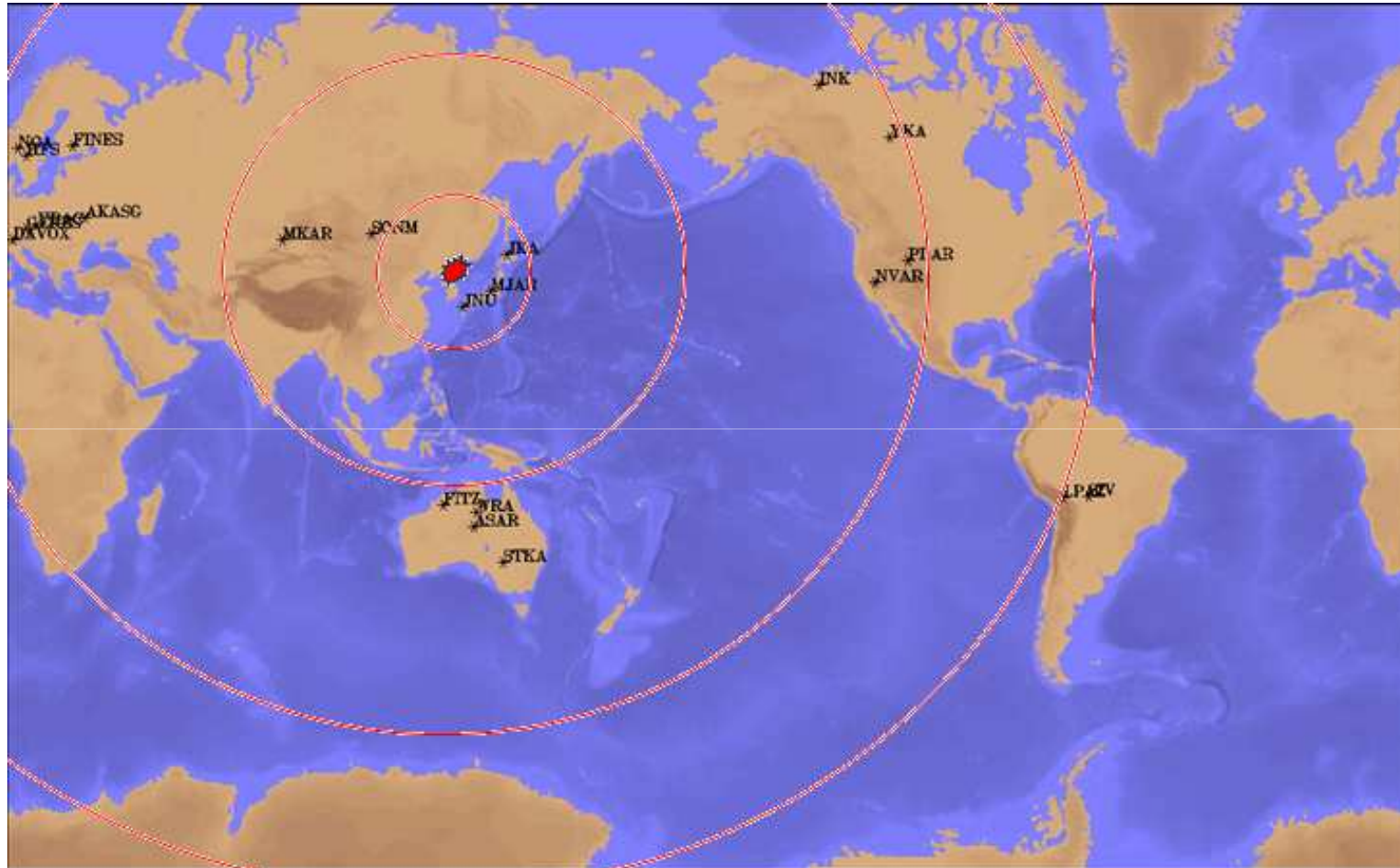
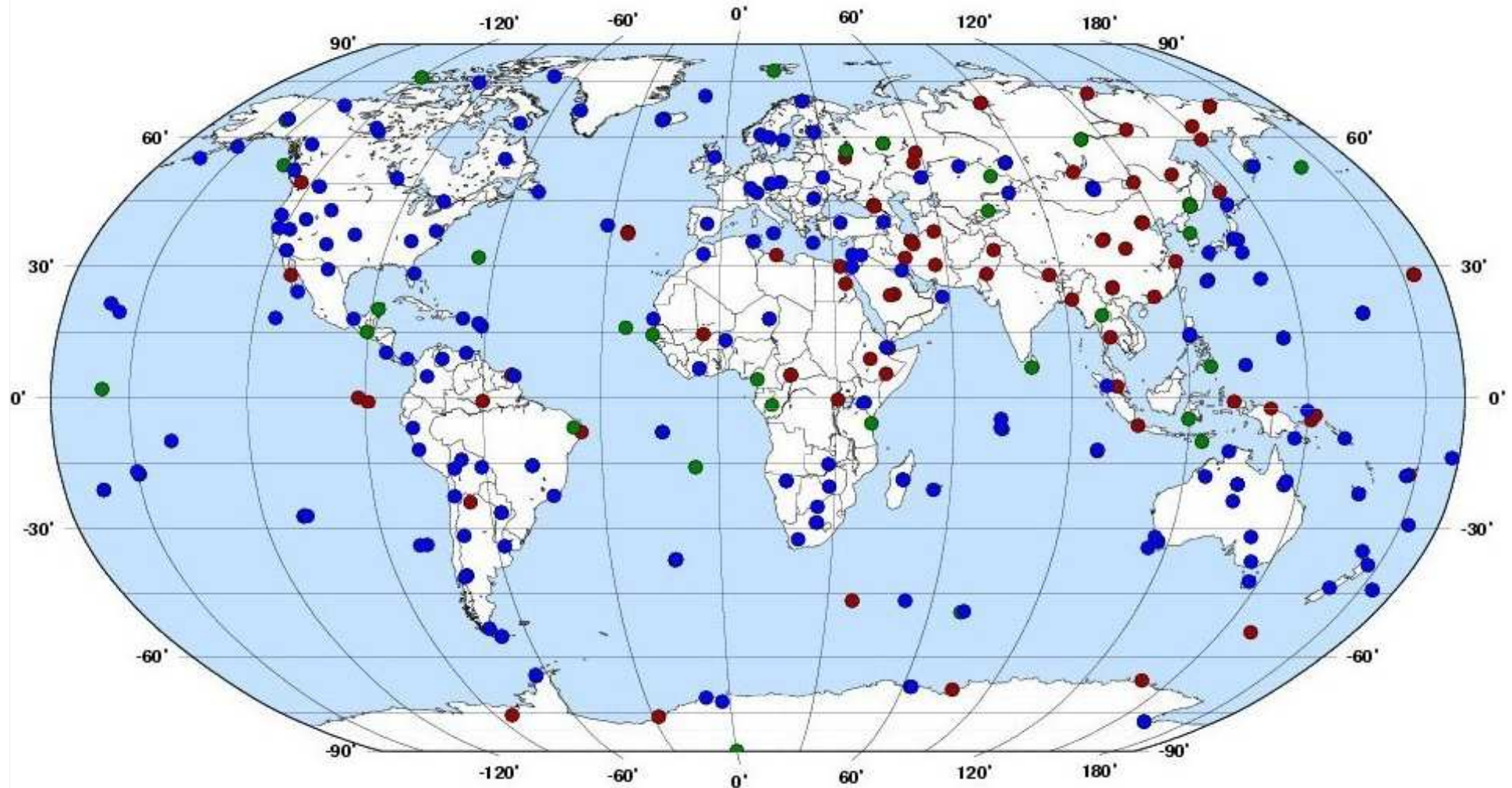


The October 2006 DPRK event



22 seismic stations registered shockwaves from the event. Within minutes, precise recordings of the explosion were provided to CTBTO Member States.

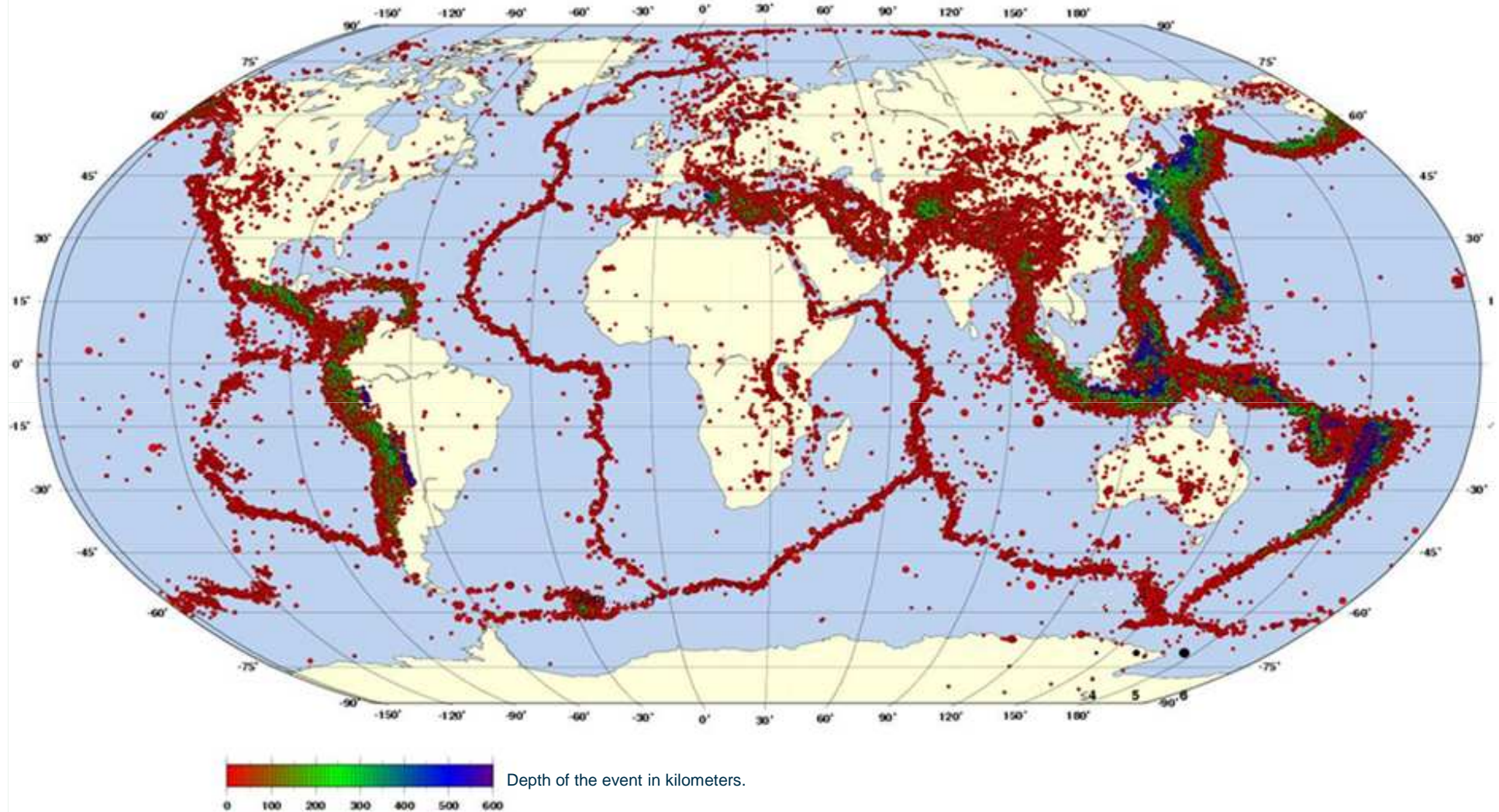
The International Monitoring System



Only around 55% of all monitoring facilities (blue) had been established on 9 October 2006, when the Democratic People's Republic of Korea announced that it had conducted a nuclear test. Since then, 66 facilities have joined the network (green). Once all of the remaining ones (red) have been established, the International Monitoring System will comprise 337 facilities.

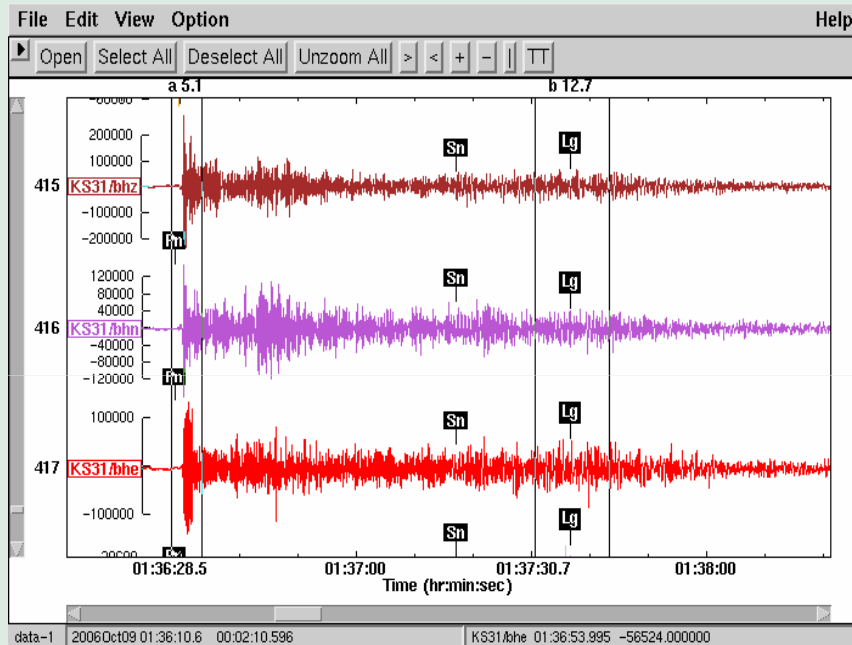
n.b.: many stations are co-located, these are represented together by one dot

Detecting the needle in the haystack

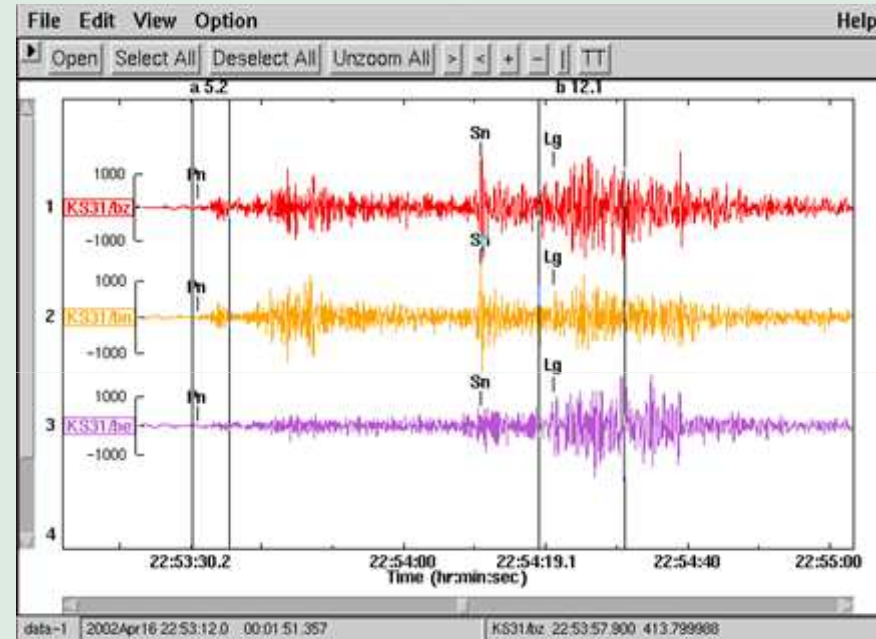


Seismic events located by the CTBTO's International Data Centre from February 2000 to March 2009 – on average 25,000 per year.

Explosion or Earthquake?



Seismic activity measured in North Korea on 6 October 2006



Seismic activity measured in North Korea on 16 April 2002

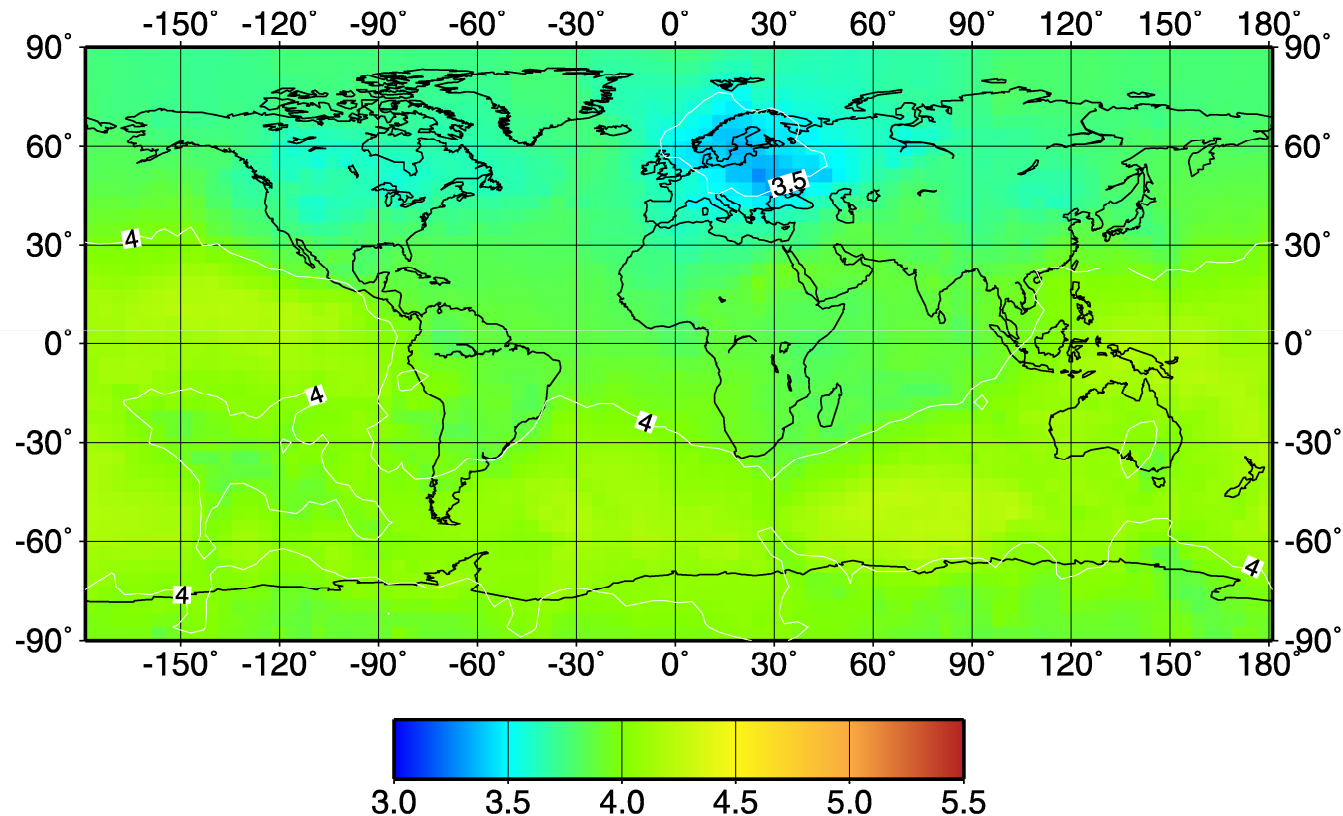
The event on 9 October 2006 showed characteristics typical of an explosion: sudden, impulsive onset; lacking later surface waves.

In comparison, a presumed earthquake in the same region four years earlier: emergent arrivals and large surface waves.

Seismic Detection Threshold in 2006

2006/10/09 01:00:00 - 2006/10/09 02:00:00

Average Detection Capability

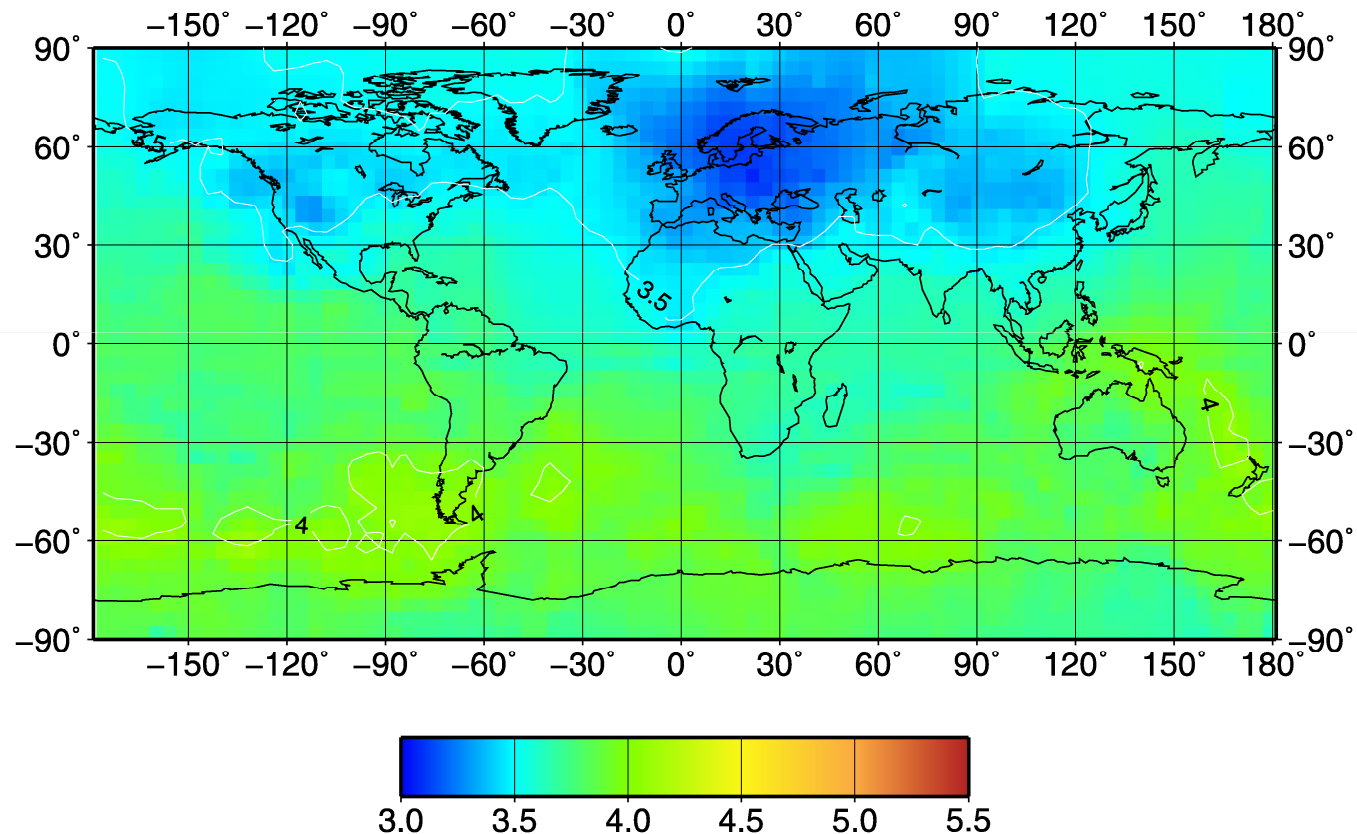


Average detection capability of the International Monitoring System's primary seismic network on 9 October 2006 on the Richter scale. A magnitude of four is roughly equivalent to a one kiloton explosion.

Seismic Detection Threshold Today

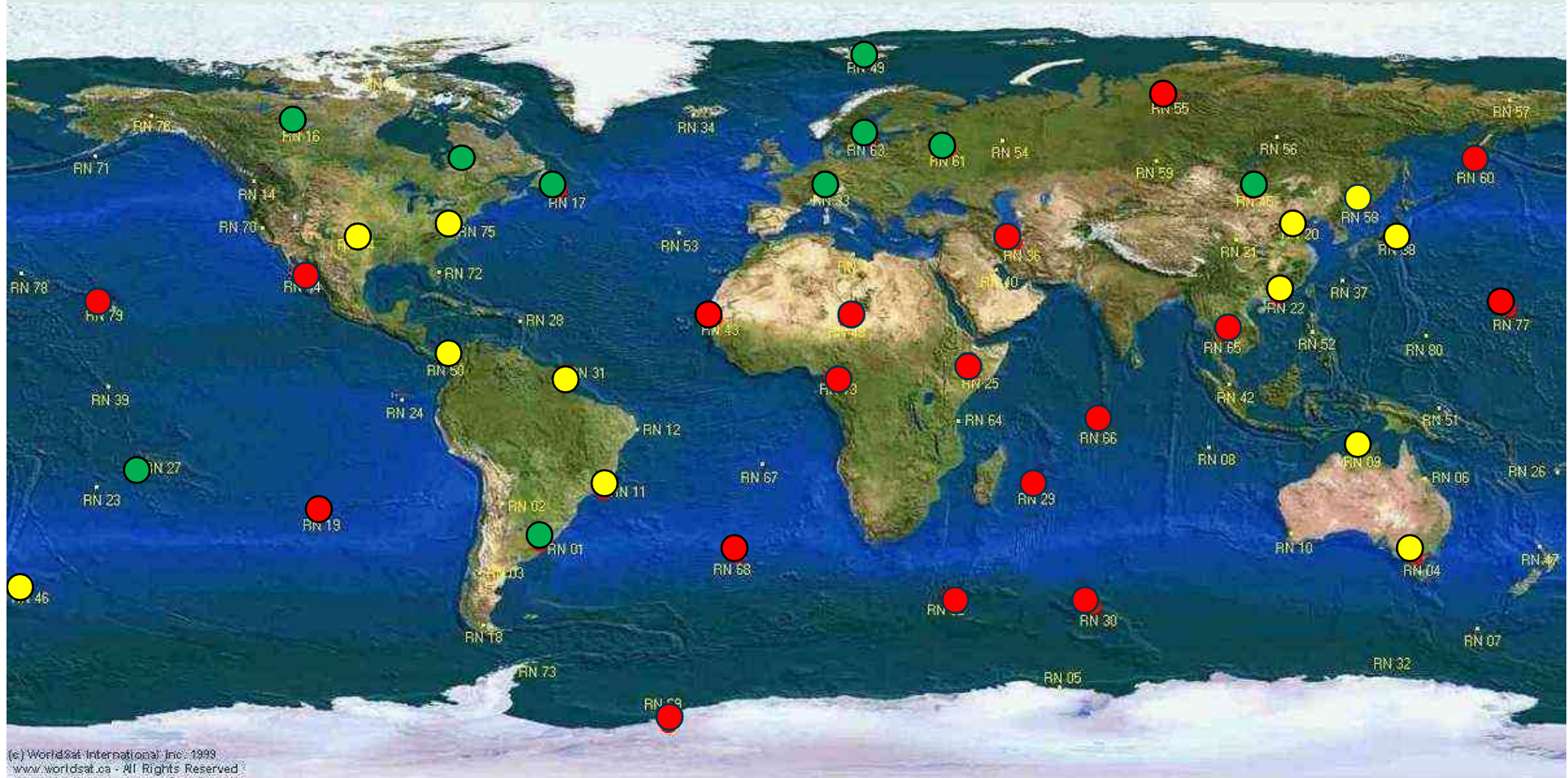
2009/03/14 02:00:00 – 2009/03/14 03:00:00




Average Detection Capability



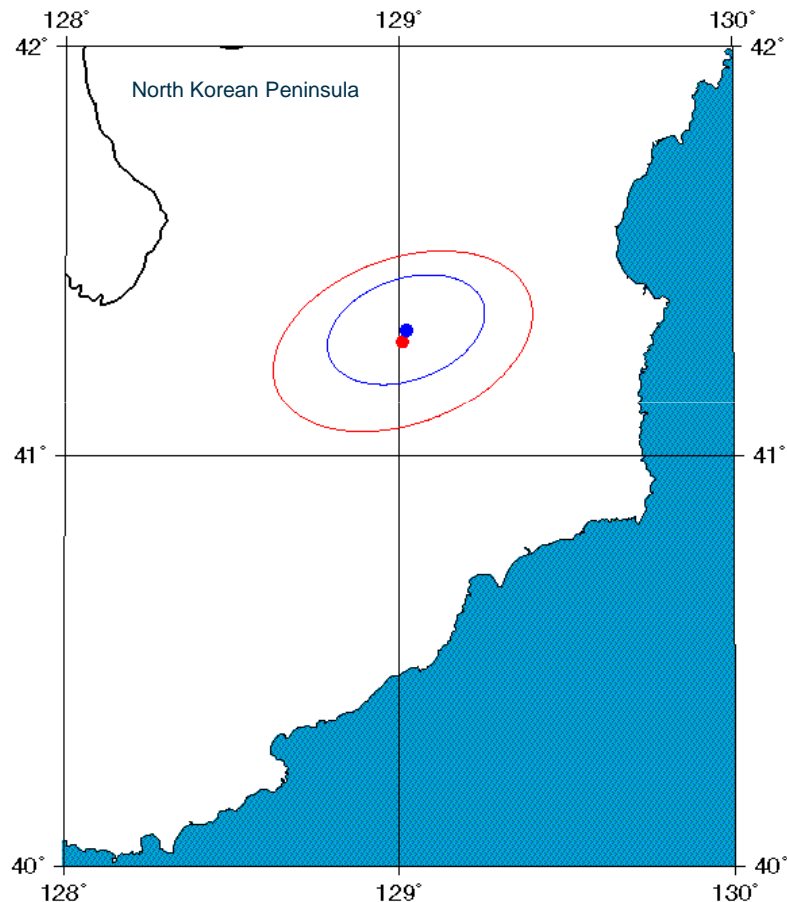
Average detection capability of the International Monitoring System's primary seismic network today (April 2009) on the Richter scale. A magnitude of four is roughly equivalent to a one kiloton explosion.

Noble Gas Network



-  established by October 2006: 10 stations
-  established between October 2006 and today (April 2009): 12 stations
-  remaining: 18 stations

Pinpointing the 2006 DPRK Event

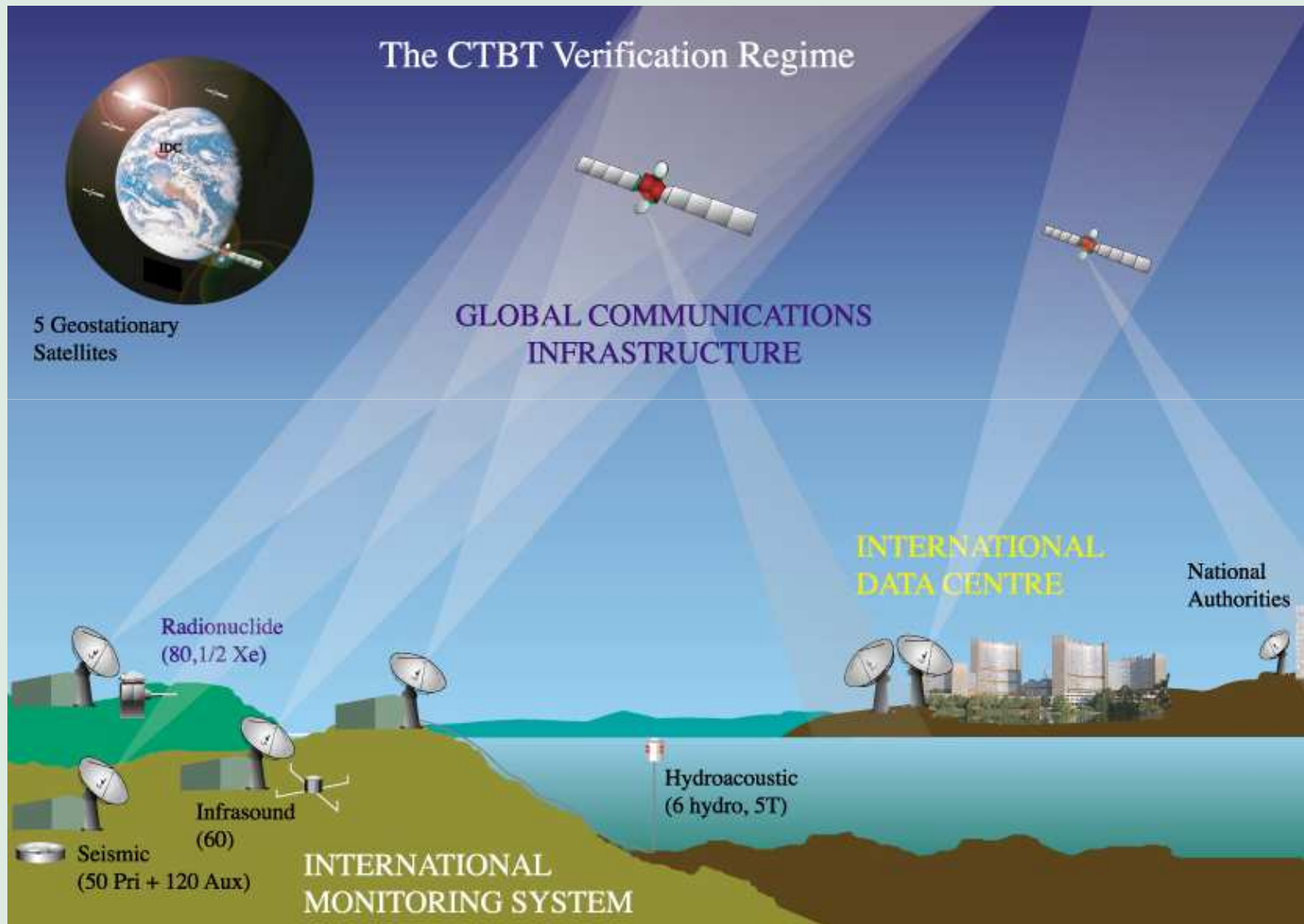


The location detected automatically is shown in red. Its uncertainty ellipse was 2,389 sq km.

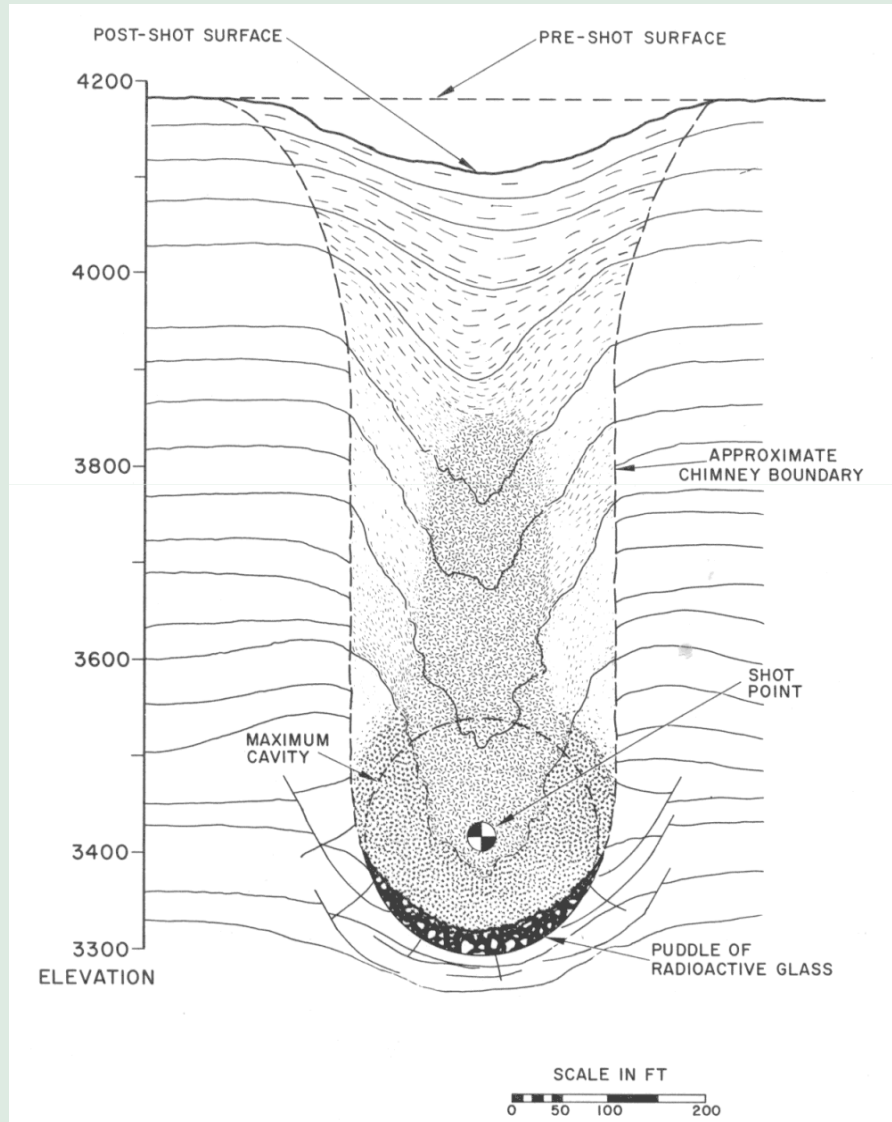
The location reviewed by CTBTO analysts is shown in blue. Its uncertainty ellipse was reduced to 880 sq km.

1,000 sq km is the maximum area allowed for an On-Site Inspection under the Treaty.

Verification Regime - Schematic Overview



Tracking down Underground Nuclear Explosions in On-Site Inspections



Underground nuclear explosions leave several distinct traces that can be detected during an on-site inspection in different ways:

Forensic Search for Changes in Man-made Infrastructure & Geomorphology

Structural Investigation of (altered) Geological Formations and their Groundwater Regime

Mapping of Radioactive Contamination of the Environment