Summary

• Sources of GPS data and results
  – Major international organizations involved in GPS
  – Examine access to GPS data
  – Examine access to GPS results
GPS Groups/IGS

- There are many international and national groups involved in the deployment of GPS.
- The international organization is the International GPS Service (IGS)
- Started as pilot project by the International Association of Geodesy (IAG) in 1992.
- Involves:
  - Data collection (standards for stations)
  - Data dissemination (through several archives)
  - Data analysis (IGS analysis centers)
  - Analysis improvements (working groups and standards)
QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.

Current IGS Network (approximately 400 stations)

http://igscb.jpl.nasa.gov/images/maps/all_world.png
North American Portion of network

QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.


European part of network
IGS

• Data for each IGS station is openly available usually within <1 day of collection. Some sites are available hourly.
• The central bureau of the IGS is located at: http://igscb.jpl.nasa.gov/
• Explore site for structure: Web site index gives an overview of page content.
US Groups

• There are a number of large US groups that run GPS networks.

• Largest array is the Southern California Integrated array (SCIGN) with 250 stations [http://www.scign.org/](http://www.scign.org/)

• Other groups in the Western United States have networks of 20-50 stations. In all over 400 geophysical class stations in Western US.
National Geodetic Survey CORS

- Main reference frame of the United States.
- Continuously Operating Reference Stations (CORS)
- [http://www.ngs.noaa.gov/CORS/](http://www.ngs.noaa.gov/CORS/)
- Serves the geodetic control needs of the US.
- About 300 GPS sites currently in the network many of them shared with other institutions.
Western US Groups

• Networks in the Western United States
  – BARD (Bay Area Regional Network)
    http://quake.geo.berkeley.edu/bard/
  – PANGA (Pacific Northwest Geodetic Array)
    http://www.panga.cwu.edu/
    http://www.geophys.washington.edu/GPS/gps.html
  – WCDA Western Canada Deformation Array
    http://www.pgc.nrcan.gc.ca/geodyn/wcda.htm
  – BARGEN (Basin and Range Geodetic Network)
    http://cfa-www.harvard.edu/space_geodesy/BARGEN/
  – For list of arrays see:
    http://sopac.ucsd.edu/cgi-bin/dbShowArraySitesMap.cgi

• Explore these web sites.
Availability of processed GPS data

• Many of the network groups put analyzed results on their web pages as well as access to data.
• IGS also sponsors 7 global analysis groups (funding comes from other sources).
• SCIGN uses three analysis groups:
  http://sopac.ucsd.edu/cgi-bin/dbShowArraySitesMap.cgi?array=SCIGN
  http://pasadena.wr.usgs.gov/scign/Analysis/
Other important groups

• University Navstar Consortium (UNAVCO) facility and corporation
  http://www.unavco.org
• Unavco is installing the Plate Boundary Observatory (PBO).
• Supports a variety of applications of GPS. Initially tectonic deformation but now Antarctic Research and low-precision GIS applications
• Supports US Universities in installing GPS through out the world for geophysical studies.
Summary

• Data from thousands of GPS stations are collected and processed each data
• Largest single array is in Japan (>1000 stations)
• GPS developments are like the internet development: Many active contributors but often quality is debatable.