



A REVIEW OF GEODETIC ACTIVITIES IN COLOMBIA

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Royal Botanical Expedition

- During the Expedition, after 1783, the first measurements of longitude of Bogotá were done by Mutis.

- In 1803, the first astronomical observatory of America was established in Bogotá: Caldas was the first director.

- Humboldt was a very positive influence in the measurement and discovery of present Colombian territories.



José celestino Mutis
1732 - 1808



Friedrich Heinrich Alexander Barón de Humboldt
1769 - 1859



Francisco José de Caldas y Tenorio
1768 - 1816



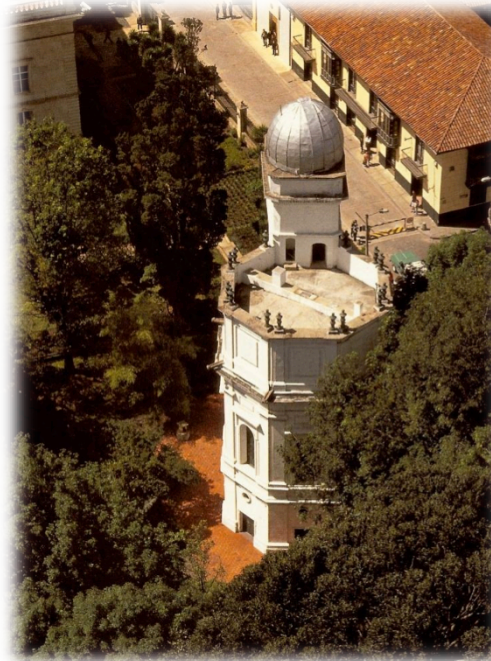
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Astronomical Observatory of Bogotá

- Geodetic jobs in Colombia started in 1941.

- Hayford's (International) ellipsoid was adopted and fitted to the observatory. It was called Datum Bogotá, and was the base for national geodesy and mapping from 1942 to 2005.

- During this period, more than 18000 horizontal control points and 25000 vertical points were monumented across Colombia.



Agostino Codazzi
Bartoloti
1793 - 1859



Julio Gravito Armero
1865 - 1920

Geodetic Network 1942 – 1987 (1)



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- Inter American Geodetic Survey (IAGS), of the United States Army, was activated in 1946. With its support, intensive geodetic campaigns were done in Latin America.
- The most of the geodetic horizontal and levelling networks of the continent were made under the collaborative effort of IAGS and agencies of the countries.



River crossing leveling operation in Colombia.
Trabajos de nivelación cruzando un río en Colombia.



Leveling to a picture control point in Colombia.
Trabajos de nivelación hasta punto de control fotográfico en Colombia.

Geodetic Network 1942 – 1993 (2)



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- Triangulation networks covered the major part of Colombia.
- During the eighties, optical methods were replaced by new techniques, like TRANSIT and electronic distance measurements.
- In the nineties GPS receivers were acquired and a new network came to replace the older one.



Geodetic Network 1994 -



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- In 2005, the datum Bogotá was replaced by the National Geocentric Reference Frame MAGNA-SIRGAS.
- Today, 35 continuous GPS stations are operated by IGAC and their data are released to the users.
- More than 6200 points are the densification of MAGNA-SIRGAS for engineering, surveying, cadastre, etc.



Geodetic Network 1994 -

Since 1993, when the Geocentric Reference for the Americas SIRGAS was established, Colombia has been an active component of it: Coordination of Working Group III, vertical datum, (2007 – 2009) and Working Group 2: national networks (2009 – present).

- IGAC runs one of the SIRGAS processing centers of the GNSS permanent stations network: SIRGAS -CON

