

NEVADO DEL RUIZ, COLOMBIA, 1:12,500

(Colour orthophoto map)

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The glacierized volcano Nevado del Ruiz reaches an altitude of 5311 m a.s.l. and is situated in the Cordillera Central in Colombia. On 13 November 1987, the volcano erupted causing a flood in which over 20,000 people lost their lives (cf. Volume V). Since then the glaciers in the Ruiz region have been the subject of intense scientific research.

Part of this research programme entails the creation of a large-scale map of the region, in order to document the state of the volcano since the eruption and to show the changes the eruption has brought about. In addition, the map will also serve as the basis for future investigations, for example, as a reference system for measurements of ice thickness. The map was produced as a colour orthophoto map in order to offer optimum potential for interpretation.

Aerial photographs taken on 19 January 1987 with a wide-angle lens camera (15/ 23) using standard Agfa slide film provided the basis for cartographic representation. The photographs were taken at a height of 4000 m above ground (photo scale about 1:27,000). Six photos from the flight were chosen to represent the area to be mapped, totalling 7.5 x 10 km². The state-of-the-art method of digital image processing was used to produce the orthophoto. The six photographs were scanned to a pixel size of 0.025 mm and colour separation runs for black, red, blue and yellow carried out. Geometric rectification and radiometric matching were conducted out digitally on a mainframe computer using a program developed at the Institute of Photogrammetry at the Technical University at Munich.

Cartographic editing included the drawing of contour lines at 25 m intervals (blue in the glacial area and black elsewhere), positioning of relative elevations, addition of text and design of the map frame. The map, which is probably the first ever colour orthophoto map of a glacier, was printed on glossy paper in black, red, blue and yellow.