

REPORT OF THE THIRD EXPLORATION TRIP TO THE NORTH-WEST OF ARGENTINA

Paso de San Francisco

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Introduction: The group IATE from the Observatorio Astronómico of Córdoba (OAC) has made a first exploration trip in October 2000 in the area located between San Antonio de los Cobres and Tolar Grande, in the Arizaro Salt Flat (H.Muriel & P.Recabarren). In January 2002 we made a second recognition trip, in collaboration with Cornell University, to the north-west of Argentine (Recabarren & Mosconi 2002), which with the preliminary analysis of GOES images (Recabarren et al. 2002, Recabarren et al 2003) has helped us to find a large region situated between the latitudes 22 and 28 S, and longitudes 66 and 69 W, potentially suitable for installing some astronomical facility. We have also analysed seismological data which show that this region has a very low seismicity compared to the neighbourhood regions. The northern area was covered by the first trip and the central region will be explored in the next expedition. The third trip has concentrated on the southern area of the pre-selected region. The target was to explore the track of the Paso de San Francisco in order to find a place where to install a meteorological station. This time the trip was carried out by Hernán Muriel, Mirta Mosconi and Pablo Recabarren from the grupo IATE (OAC) and Marc Sarazin from ESO. The trip was supported by both institutions.

Developed Activities: The trip was realized in spring (southern hemisphere) starting on the 14th October 2002 and lasted three days. The starting point was Córdoba city and the main point of interest was to reach the San Francisco pass in the border between Argentina and Chile. This pass (4747 m) is 843 km far from Córdoba and can be reached by the paved national road number 60. The region belongs to the province of Catamarca whose main city is San Fernando del Valle de Catamarca (90851 inhabitants) with different facilities including a National University.



Figure 1. Road Map.

Figure 1 shows a road map of the region. Figure 2 and 3 present a satellite image and an altitude map of the area respectively. Figures 4a and 4b correspond to our trajectory and display the altitude profile corresponding to the Chaschuil Valley and from Las Grutas to the borderline respectively.

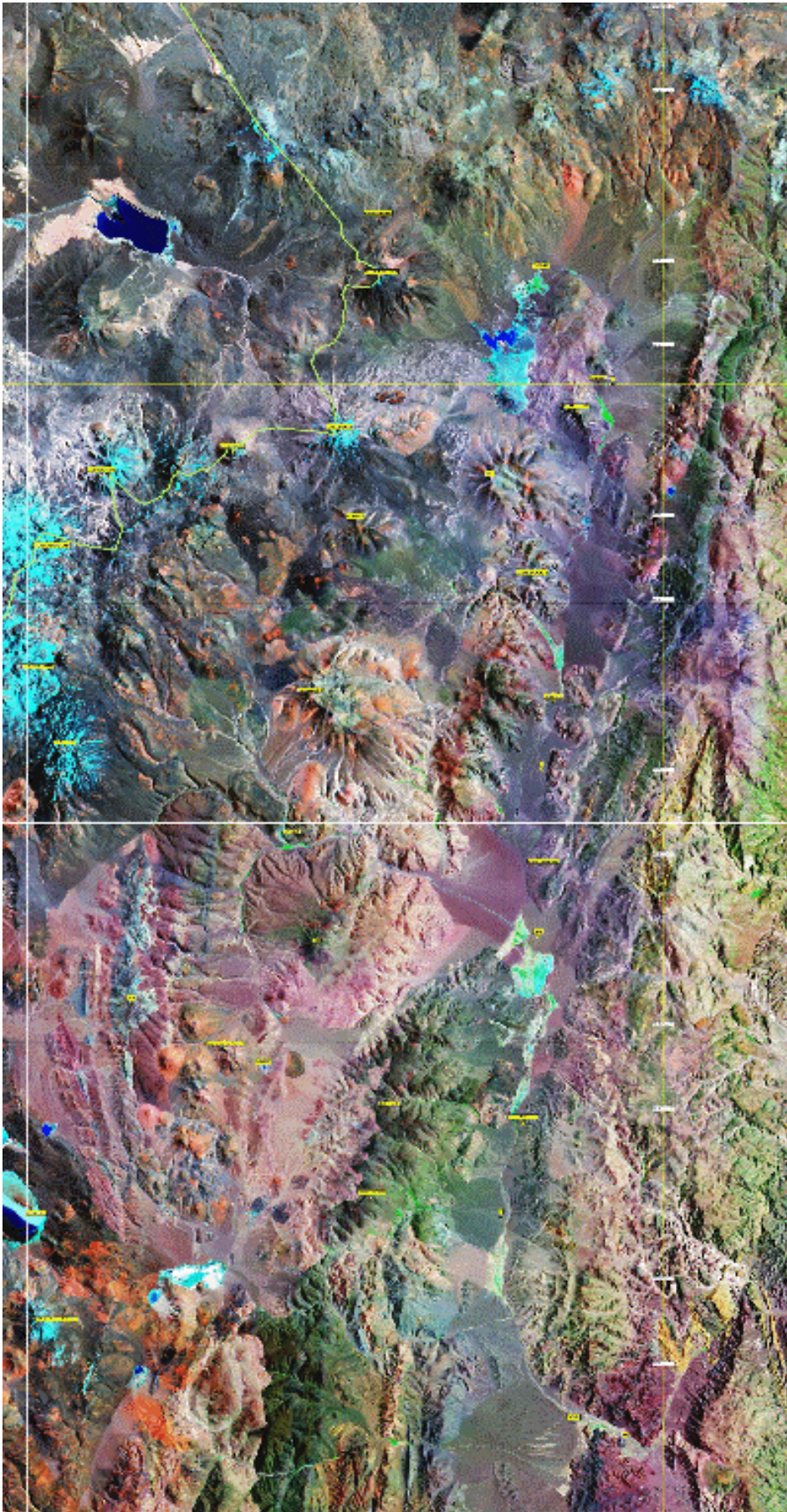


Figure 2. Satellite image.

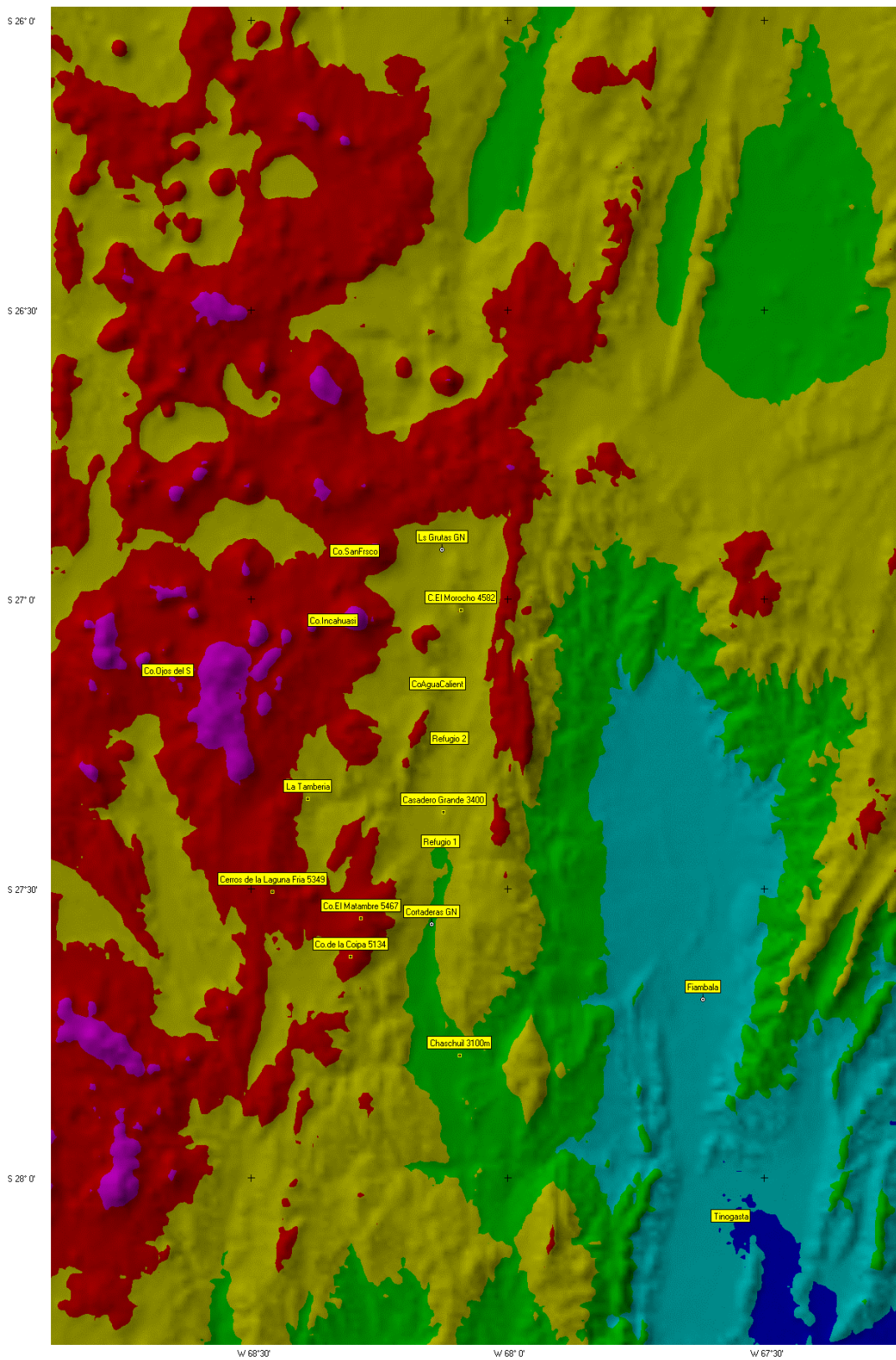
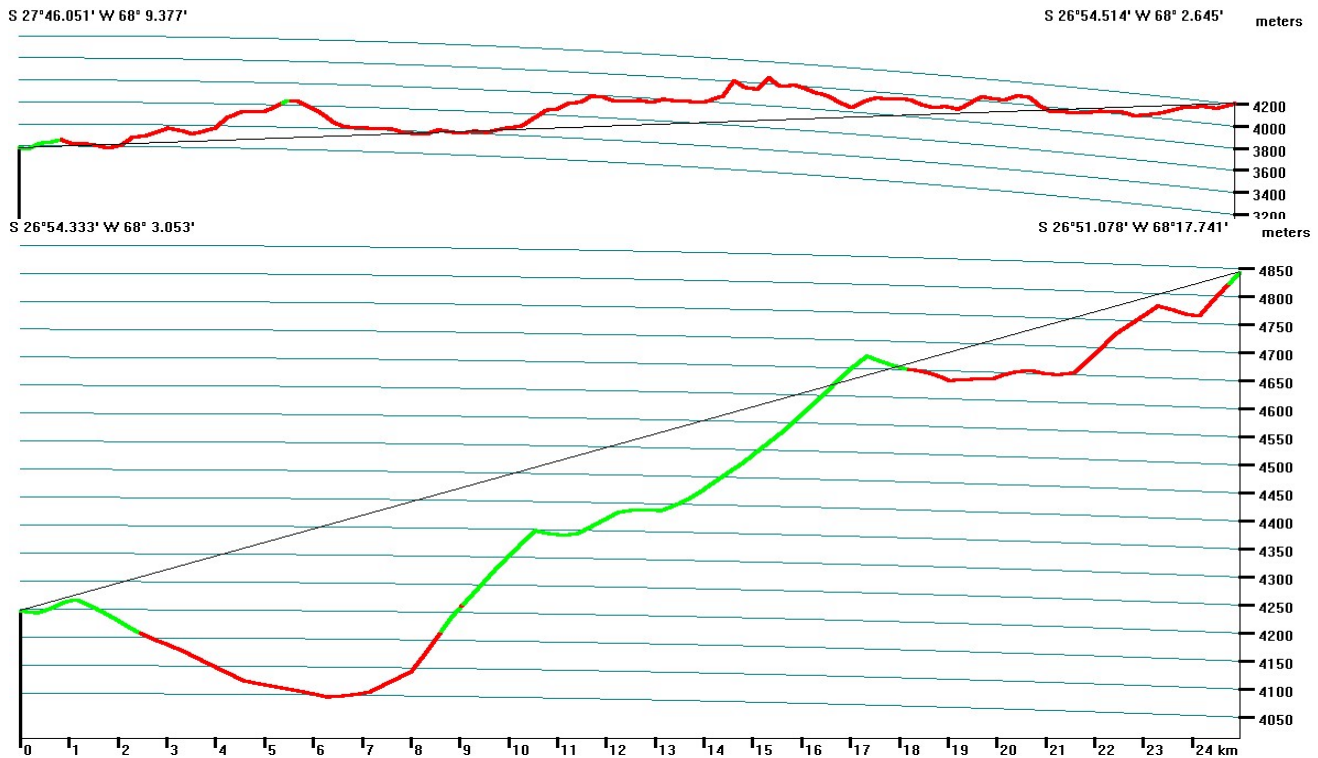


Figure 3. Altitude map. Blue: $h < 1000$ m; light blue: $1000 < h < 2000$ m; green: $2000 < h < 3000$ m; yellow: $3000 < h < 4000$ m; red: $5000 < h < 6000$ and violet: $h > 6000$.

Figure 4a and 4b. Altitude profiles.



The Paso de San Francisco can be easily reached from Cordoba in two days. The first stop was in Fiambalá city which is a sort of starting point in terms of our astronomical interests. Fiambalá is a small town (3632 inhabitants) with a main Hotel Municipal and few restaurants. If more facilities are needed the middle size town of Tinogasta (8960 inhabitants) is far 50 km from Fiambalá. The national road 60 goes from Fiambalá to Chaschuil close to a river and then turns to the north through the Valle de Chaschuil of approximately 100 kms long (see figure 5). This valley has an average altitude of 3300 ms. In the middle of the valley is settled the gendarmerie post, Cortaderas (3385, figure 6) where the townhall of Fiambalá offers some lodging facilities, like radio communications and has the advantage of being near to the Paso de San Francisco. At Cortaderas there is also a lagoon. Close to this point there is an interesting mountain called Cerro el Matambre (figure 7) whose summit can be reach by 4WD vehicle, following the words of the Fiambala region Guide Cirilo Arancibia. Mr. Arancibia has demonstrated to have a lot of experience in knowing the region. He has guided several trekking and mine recognition trips during many years. He commented that the base of Cerro Pissis (6882) can also be reached by 4WD vehicles. Close to the Cerro Matambre can be appreciated Cerro Coipa (5150) pointed out by Marc Sarazin as an interesting mountain to take into account (it could be appreciated in the left side of figure 6).



Figure 5. Beginning of Chaschuil Valley.



Figure 6. Gendarmerie Post at Cortaderas and Cerro Coipa.



Figure 7. Cerro Matambre.

From the Chaschuil valley it is possible to see different mountains of more than 6000 m like Incahuasi (6638 m, see figure 8). Along the Chaschuil valley there are several interesting mountains between 4000 and 5500 ms like El Morocho (4582 m, see right side of figure 8) or Aguas Calientes (5517 m). The end of the Valley corresponds to the Cordillera de San Buenaventura that goes perpendicular to the valley.



Figure 8. Centre: Incahuasi. Right side: Cerro El Morocho.

The road 60 turns to the west and the view is dominated by Cerro San Francisco (6016 m, figure 9) at the west and several mountains like Cerro dos Conos (5900 m, see figure 10) or Cerro Pabellon (5800 ms) in the Cordillera de San Buenaventura to the north. There is a track that goes to the north close to Cerro dos Conos that in principle can be travelled using 4WD vehicles. The highest point of paved road 60 is Paso de San Francisco at 4830 ms and continues as a non paved road to Copiapó (Chile), (figure 11 shows the west view from Paso de San Francisco). The Paso de San Francisco is at 210 km from Fiambalá. Close to the border there is another gendarmerie post and between Cortaderas and Paso de San Francisco there are three small shelters in good conditions.



Figure 9. Cerro San Francisco.



Figure 10. Centre. Cerro dos Conos



Figure 11. West view of the border between Argentina and Chile.

Highlights:

- Good logistic: roads in good conditions and areas of interest that one can easily reach.
- Small or middle size town with lodging facilities not far from the area of interest.
- Several mountains between 4000 and 5000 m whose summit can be reached by 4WD vehicles and are close to a paved road.
- Two gendarmerie post that can be used for logistic.
- Water seems to be available everywhere.

Referencias.

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