

Station GPS permanente

IPG Paris

DGF Uchile

UNAP Iquique

Site Name: Cerro Mica (Coastal Cordillera)	Author : Carrizo
Site Code : <u>MICA</u>	Date installation : 2007 12 16
Coordinates : MICA : -21.71476292 - 69.82727839 1675.36	

DESCRIPTION

North Chile II region, semi-permanent GPS station IPGP / DGF network installed during Dec- 2007.

MONUMENTATION

Station located in the Coastal Cordillera, implanted in bedrock (Jurassic andesitic lavas). Tige Inox (Delmont type) sealed in bedrock with epoxy-glue. Receptor TRIMBLE NetRS, Antenna TRIMBLE Zephyr geodetic and autonomous energy (battery and solar panel).

HISTORIC

Semi-permanent GPS station installed since 16 -DEC- 2007, during Nov-2007 Tarapacá Earthquake post-seismic intervention.

PRACTICAL INFORMATIONS

state property		NO	
private property		NO	
access restricted		NO	located in the nature
telephone nearby		NO	
Electric power nearby		NO	
equipment storage available	YES		
possibility of leaving the equipment without watching	YES		
person in charge	YES		Prof. Manuel Olcay (UNAP Iquique) 093701220 (cel.), (57) 310716 , (57) 394369, molcay@unap.cl
person to contact	YES		

COORDINATES

Tridimensional

MICA_XYZ 2044899.6434 -5566050.4978 -234719.4090

Ellipsoidic

MICA_WSU -69.82727839 -21.71476292 1675.3674

MICA _ Site Information Form _ International GPS Service for Geodynamics

0. Form

Prepared by (full name) : Daniel Carrizo, Marta Béjar
Date Prepared : 20-JAN-2008
Report Type :

1. Site Identification of the GPS Monument

Site Name : Caleta Urcu tracking station
Four Character ID : **MICA**
Monument Inscription :
IERS DOMES Number :
CDP Number : (XXXX)
Date Installed : 16-DEC-2008
Geologic Characteristic : ANDESITIC LAVAS
Bedrock Type : IGNEOUS
Bedrock Condition : moderated weather, principal joint set N65W/81NE
Fracture Spacing : 1-10 cm

Notes : Was installed on the top of hill located in the Coastal Cordillera.

Local correspondant:

No auxilliary point ;

Additional Information : Geological Province: Coastal Cordillera-northern Chile

: Local Geology: basement Paleozoic metasedimentary rocks, Jurassic Lavas and Cretaceous granitoids. coverture neogene alluvial, coluvial and saline deposits.

: Geological information from

: Program:.

2. Site Location Information

City or Town :
Country : Chile
Tectonic Plate : South American but in the convergence area of Nazca/ SOAM plates.
Approximate Position
X coordinate (m) : 2044899.6334
Y coordinate (m) : -5566050.4978
Z coordinate (m) : -2345719.4090
Latitude (deg) : -21.714762
Longitude (deg) : -69.827278
Elevation (m) : 1675.3674

Additional Information :

3. GPS Receiver Information

3.1 Receiver Type : TRIMBLE / NetRS
Serial Number : 4625209656
Firmware Version :
Date Installed : 04-DEC-2007
Date Removed : (dd-MMM-yyyy hh:mm UT)
Additional Information : (multiple lines)

3.2 Receiver Type :
Serial Number :
Firmware Version : 0
Date Installed :
Date Removed : (dd-MMM-yyyy hh:mm UT)

4. GPS Antenna Information

4.1 Antenna Type : TRIMBLE / Zephyr geodetic
Serial Number : 60142400

Antenna Height (m) : 0.000 (to be verified)
Antenna Reference Point : ARP = dhpab
Degree Offset from North : 0.0
Antenna Radome Type :
Date Installed : 04-DEC-2007 hh:mm UT
Date Removed : (dd-MMM-yyyy hh:mm UT)

4.2 Antenna Type :
Serial Number :
Antenna Height (m) :
Antenna Reference Point :
Degree Offset from North :
Antenna Radome Type :
Date Installed : hh:mm UT
Date Removed :

5. Local Site Ties :

5.1 Monument Name :
Site Ref CDP Number :
Site Ref Domes Number :

Differential Components from GPS Mark to Site Reference (ITRS)

dx (m) :
dy (m) :
dz (m) :
Accuracy (mm) : (mm)
Date Measured : (dd-MMM-yyyy hh:mm UT)
Additional Information :

6. Frequency Standard : NO

6.1 Standard Type :
Frequency :
Effective Dates :

7. Collocation Information

7.x Instrumentation Type : No
Status : SEMI-PERMANENT
Effective Dates : (dd-MMM-yyyy - dd-MMM-yyyy)

8. Meteorological Instrumentation : No

8.1 Humidity Sensor Model :
8.2 Pressure Sensor Model :
8.3 Temperature Sensor Model :
8.4 Water Vapor Radiometer :
8. Other Instrumentation : (multiple lines) pm

9.

9. On-Site, Point of Contact Agency Information

Agency : Department of Physics_ Universidad Arturo Prat, Iquique, Chile
Mailing Address :
Primary Contact : Contact Name : Manuel Olcay, David Lazo
Telephone (primary) : 447070 Fax :
E-mail : molcay@cavanca.cec.unap.cl
Secondary Contact : Contact Name : Socquet Anne
Telephone (primary) : 0 33 1 44 27 24 99 Telephone (secondary) :
Fax : 0 33 1 44 27 38 94 E-mail : socquet@ipgp.jussieu.fr

10. Responsible Agency (if different from 9.)

11. More Information

URL for More Information :
Hardcopy on File
Site Map : Site Diagram : Horizon Mask
Monument Description : Site Pictures : Additional Information : (multiple lines)
Antenna Graphics with Dimensions

ADDITIONAL INFORMATION

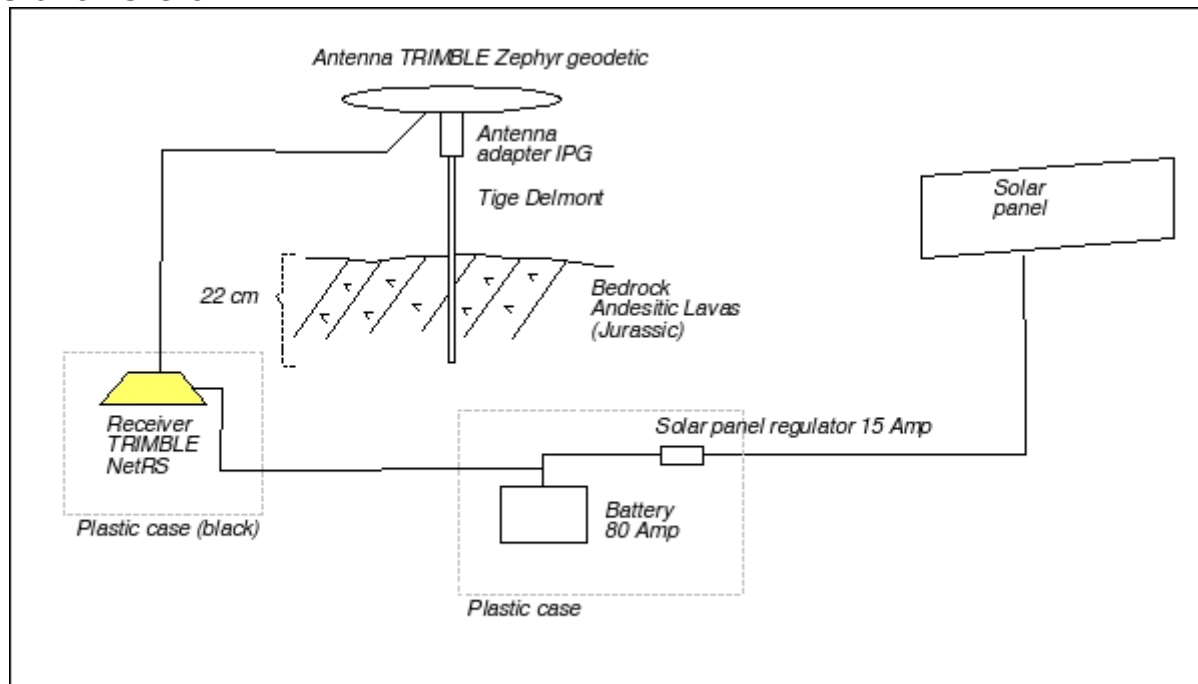
Battery : 80 Amp

Antenna cable: 15 m

Power connection : Autonomous (battery – Solar Panel and solar panel regulator)

receiver communication: identified in the cover of receiver

Station sketch



Locations

<http://www.turistel.cl/v2/secciones/mapas/ruteros/tarapaca.htm>





Photography N°1: View of MICA semipermanent station. The cases and solar panel are fixed to the bedrock. Outcrop of Jurassic lava with So? oriented N65W/81NE.



Photography N°2 : MICA receiver placement. The outcrop is characterized by differential erosion produced sub-vertical cornices follow the original stratification planes. No relevant saline-clastic coverture was observed (<5-10 cm).



Photography N°3: MICA station view point showing the access pointed out by the wheel truck.

Details for accessing

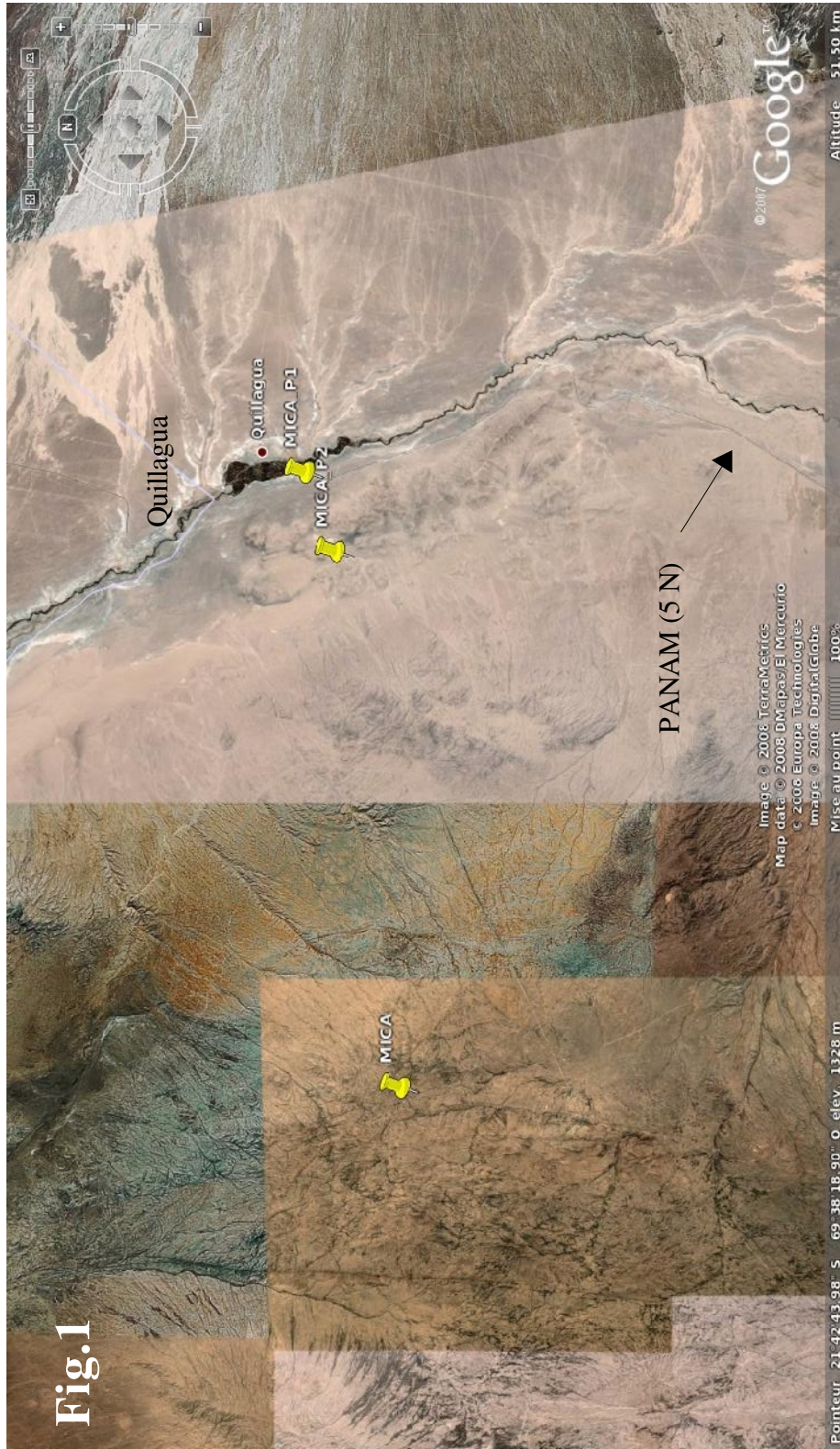


Fig.1

From the Antofagasta – Iquique Panamerican International Route (5 Norte), takes the left deviation denoted by P1, before to descend to the Quillagua valley (Fig.1 – 2).j

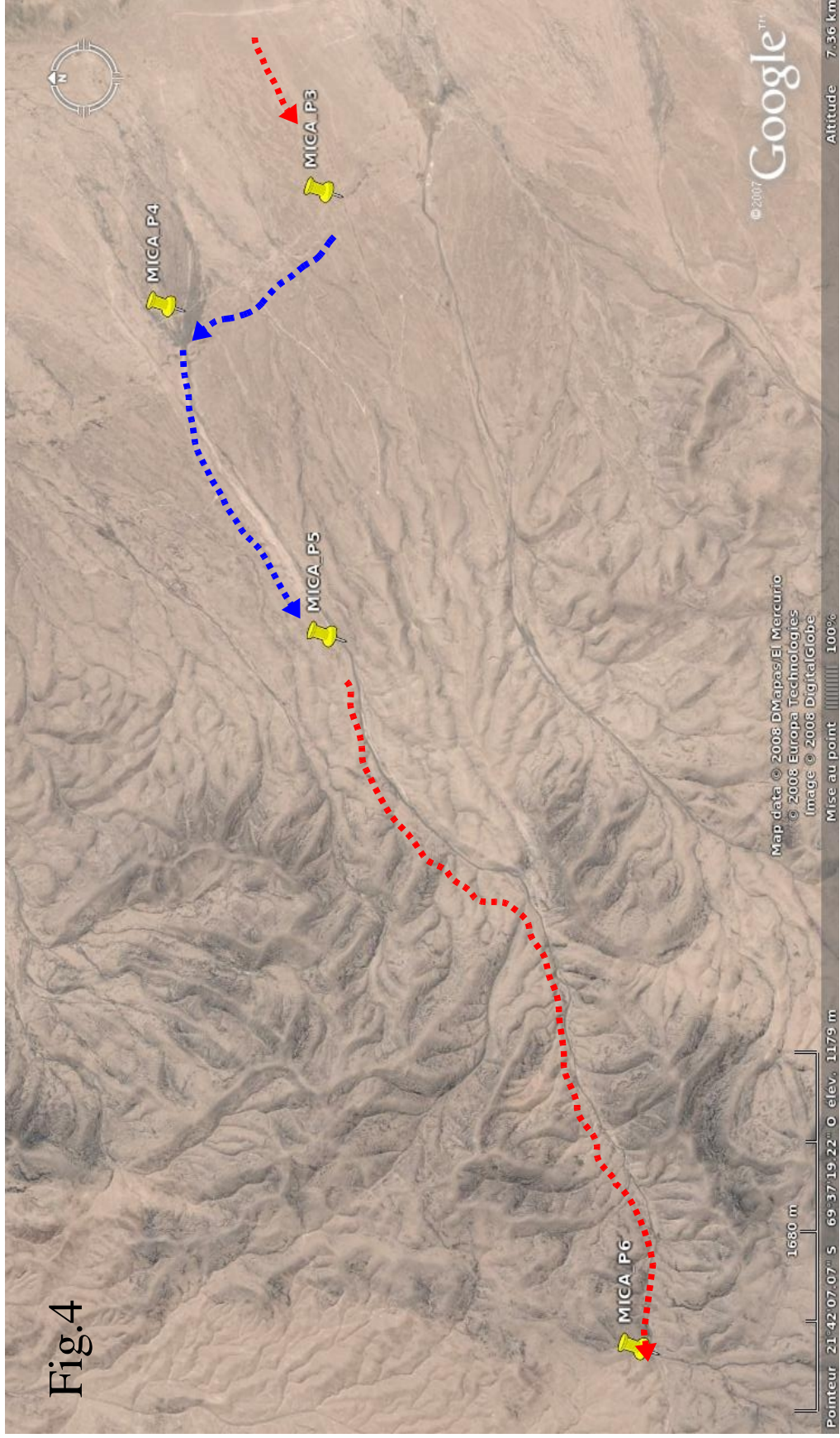
1.



2. From P1 takes the land way to the west (relative good state), arriving to a way bifurcation in P2 (Fig.2). One time arrived to P2 choose the right way option to the west (~WSW/ENE-strike) and continue navigating (GPS is recommended) to P3 (Fig.3 – 4).



Fig.4



3. Once arrived to P3 (Fig.3-4) is necessary to go out from the land way and takes a wheel tracks deviation to north (P3 deviation). From this part the route is complicated and is necessary takes caution the probability to stay stack and loose important time (blue line in Fig.4). Follow wheel tracks is recommended for arrived to P4. Near to P4 is possible to takes a miner exploration routes, but is not easy go out from there. From P4 takes the main wheel tracks route to the west, ascending the mountain front for arriving to P5 (navigating with GPS). This part of the route have a deep dust coverture (~0,5 m) giving a extra difficult to follow the route. During this part the route go trough the interfluvial landscape and once arrived to P5 is necessary go down to the drainage. Once in the drainage the route became better, but is necessary takes caution with actives gorges. The route in the drainage goes improving in quality finishing in a good way nearly to P6.

4. From P6 takes the main wheel tracks route to WSW, navigating to P7. The route have a deep dust coverture (~0,5 m) giving a extra difficult. From the route between P6 and P7 is possible to attack the access to MICA from different ways (Fig. 5). Follow fresh wheel tracks and the use of GPS-navigator is recommended. MICA station is located on the top of a hill characterized for be an isolated rock outcrop easily to found in a general smoothly relieve without of fresh rock outcrops (see photos on this document).

Access route points - WGS84

Point	South	West
P1	21°40'29.11"	69°32'28.85"
P2	21°41'9.88"	69°34'21.22"
P3	21°41'53.75"	69°35'46.81"
P4	21°41'27.62"	69°36'7.16"
P5	21°41'54.66"	69°37'6.16"
P6	21°42'44.03"	69°39'6.05"
P7	21°45'51.57"	69°46'40.33"
MICA	21°42'53.14"	69°49'38.20"

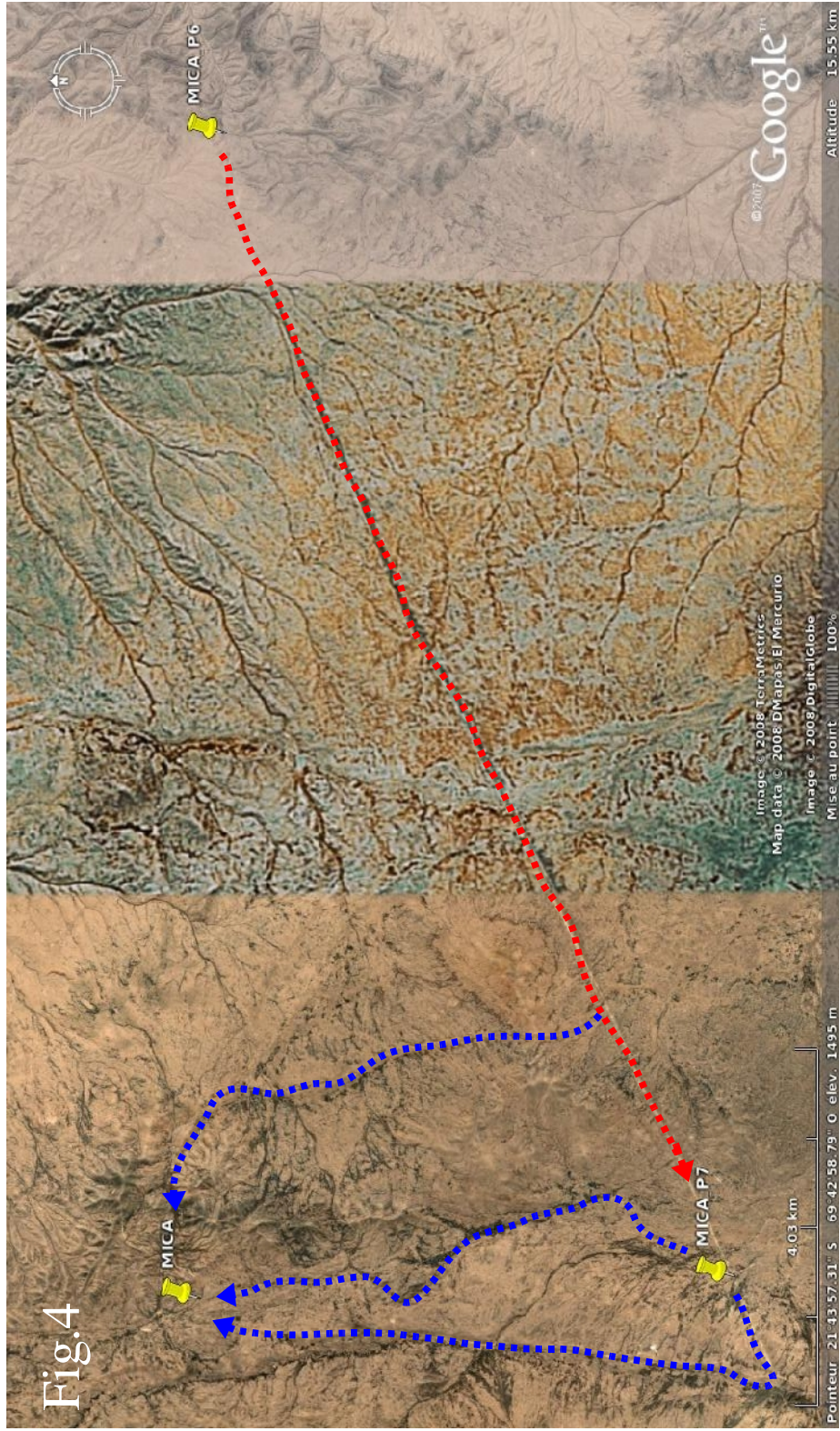


Fig.4

RECOMMENDATIONS

Access extremely hard, it is necessary a 4x4 vehicle and a driver with field experience (take caution for a bad route, never access alone!!), check the route with google earth before to access, introduce the key points in GPS navigator, takes a planing considering approximately 10-12 hrs. for access, visit the station and return to Iquique.

Equipments required:

1. Bring the case-lock keys for access to receiver.
2. Bring a laptop with windos XP environment (hyperterminal and internet explorer or similar installed) with ethernet (LAN) port.
3. Bring a crossover cable PC-PC.
4. Voltage tester.
5. *just in case bring NetRS communication connectors (ethernet and serial). Also will be recommended bring a serial-USB adapter (if the laptop do not have a serial port).

PROCEDURE DE COMMUNICATION & DOWNLOAD (RECEIVER - PC WINDOWS)

1. Make a Intranet between the receiver and the laptop.

- check the internet configuration in the receiver cover (IP, mask and Getway)
- configure the laptop communication parameters with the same receiver parameters (just the last number of the laptop-IP must be major than receiver-ip last number) expl.

	RECEIVER	LAPTOP
IP	192.168.96.56	192.168.96.60
Mask	255.255.0.0	255.255.0.0
GW	192.168.0.1	192.168.0.1

2.1 Establish the communication via http (data downloading)

- One time configured the laptop ip, connect the receiver with the laptop LAN port (using an crossover cable).
- Reboot the laptop for update the configuration. Then make de connection using internet explorer software or similar. Make the connection to the address:

`http://<receiver-ip>`

expl.

<http://192.168.96.56>

The receiver web page graphic interface will be open (see NetRS manuals).

- For download the GPS data go to "Data Logging/Data Files"*

* Do not forget that the data directory was organized for two sampling rates (1Hz and 30 s) identifying the daily files as

????YYYYMMDD0000s.T00

MICA200801120000y.T00 ~8900 kb (session 1 Hz)

MICA200801120000z.T00 ~430 kb (session 30 s)

The receiver makes a monthly directory also:

Data Logging/Data Files/YYYYMM/

Data Logging/Data Files/200801 (for data registered during 2008-Janvier)

- Always check the connection parameter in the receiver (IP – FTP – TELNET) before to make the communication. (See NetRS communication manual in INSU webpage).