



**October 14, 2017**

Despite the bad weather, we were able to move the speedboat (CECs2) away from the high waves caused by the O'Higgins glacier frontal detachment, it was left there some days ago, almost two meters over the lake's normal level. The boat was in good shape, miraculously it

didn't have any major damage. After arduous work and cold, we were able to put it back on the lake. We used double ties this time for it to withstand an eventual new glacier detachment episode.

On Sunday 15th, we sailed again to take some measurements since the weather seemed stable, but we had to return quickly due to the strong wind. It never ceases to surprise us how swiftly weather conditions can change in this landscape, in just minutes, a high risk situation can unfold. In the last few days there has not been any more detachments from the glacier. The expedition team's moral is high, patiently waiting for the next good weather window.

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### October 13, 2017

The weather continues to be unstable with strong gusts of wind of more than 100 km per hour, that has hit our camp and the lake relentlessly. It's been raining intermittently every day, with partially covered to fully covered skies. These conditions have not allowed us to operate or take measurements normally.

## October 12, 2017

Today is a mild day, at times covered with strong winds. These conditions lasted throughout the day, worsening by night. We were unable to operate once again, we remained at base camp the whole day. At night the wind and the adverse conditions intensified.

Once in bed in our tents, around 11:30 p.m. we heard some loud noises, we didn't know if it was the wind roaring through the mountains and forests, or the glacier. We went out to see what was happening. The waves were huge, we run to the beach and O'Higgins lake had become a sea, with tall waves that crashed hard on the coast, shaking up "Lady Paty" (our Zodiac) and the "CECs 2". The wrath of the wave surge snapped several ropes, the CECs2 was stranded on the beach several meters above lake level, while "Lady Paty" was adrift. We finally managed to rescue it and secure it down. After midnight and with the situation under control, we returned to base camp to sleep. The strong incessant winds stayed with us the whole night.

**October 11, 2017**

After a good rest from all our activities yesterday at the plateau, and getting over our team's defeat, we arose early, but the weather conditions didn't let us work. We have had much rain, strong winds with violent gusts have been ongoing throughout the day, despite the fact that the clouds and visibility are acceptable, the wind conditions won't allow us to sail and operate in the lake.

We hope the winds calm down to continue taking bathymetric measurements. For the time being, patience.

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**October 10, 2017**

Today for the first time since the beginning of the expedition, the day greeted us with optimal weather conditions, completely clear, blue skies and no wind.

We began operations very early with the helicopter carrying 3 barrels of fuel to the base camp. We flew to the plateau of the Ice fields and observed that the equipment installed by CECs was all in perfect condition. We retrieved data and did maintenance on the measuring gear, we also installed a fixed GPS station on the tower.

We visited the stations and cameras of Chico Glacier, these cameras were in operation for several months and one was active to this date. Finally, we installed a new GPS station in Gorra Blanca.

After several hours of intense work, high clouds began to cover the plateau, so we decided to end the day. All the expedition team members met at Base Camp at 6 p.m. happy and grateful for the great conditions. Until that moment it was a glorious day.

At night, we could hear parts of the soccer match between Chile and Brazil thanks to an Argentinean radio and sometimes a Chilean radio station, we suffered the defeat along with everyone else.

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## October 7 to 9, 2017

Over the long weekend the weather conditions have continued to be unstable, very low temperatures, rain, snow and wind with very strong gusts...

The conditions are not the best, but we have intermittently operated on the lake by taking bathymetric measurements in front of O'Higgins Glacier by taking additional security precautions. We still have to measure some areas of ice floes abandoned by the glacier after last May's detachment. Yesterday, Monday October 9, while we were taking measurements there was a significant detachment on O'Higgins Glacier that generated some very big waves on the lake. A layer of ice formed quickly and it was crowned by 3 very long recently ejected floes. As we were measuring from a safe distance from the glacier, we were never exposed to any evident risk, however, it was an eloquent reminder of the huge natural force of O'Higgins glacier, as it continues to exhibit unstable frontal signs. Later we had to go back because the weather conditions worsened due to rain and wind, which contributed to creating bigger waves on the lake.

### October 5, 2017

Strong winds mainly from the south, were present this morning, along with drizzle and some snow. The wind gusts were quite strong, but the tents and all our expeditionary gear withstood the whole night.

We were able to operate on O'Higgins' lake, but only on the surrounding areas of the base camp. We did a sail-test and checked all measurement systems on our speedboat, CECs2. Unfortunately, the strong gusts of wind did not relent, so we had to desist from taking measurements due to security reasons. The most interesting part of the journey was that we found fox tracks, it came to snoop our camp, we therefore have company now.

At night, we managed to tune in on a Chilean radio station and at times, an Argentinean radio station, making it possible to listen to the Chile soccer match, despite some interference. From this neck of the woods, we also cheered for Eduardo Vargas and Alexis Sánchez' goals.

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**October 4, 2017**

We have set our base camp on the shore of O'Higgins lake. We lowered the camera installed in front of O'Higgins Glacier, which operated correctly until June, 2017 systematically collecting photos for almost a year. Through the photo sequences we were able to observe last year's movement and flow of O'Higgins Glacier and part of the May 2017 collapse.

Today we also prepared our gear and the navigation track for our CECs 2 vessels and "Lady Paty", both are 100% operative waiting for weather conditions to improve. We are all in top condition and high spirits.

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**October 3, 2017.**



The morning began with covered skies and wind, but the forecast predicted basic conditions to fly to O'Higgins Glacier. The flights were organized while we waited for sunrise and decided to begin operations at 09:00 hours.

Alejandro, Rodrigo and Andrés, along with our personal gear, were in the first flight to the base camp in front of O'Higgins Glacier. The 35-minute flight revealed that the glacier had lost a large amount of mass in the form of floes and it had significantly receded, which we had already observed on satellite images. We landed safely and began setting camp. A second flight took place later, the load was airlifted and Jonathan and Carlos went on a third flight

The fourth air freight had to face opposing winds and some turbulence, which forced us to review the forecast and weather conditions. Since safety protocols allowed it, the boat (CECs 2) transport was arranged for a fifth flight at 8.000 feet in altitude, on a direct and complex flight to avoid most of the turbulence. When it safely reached its destination (O'Higgins Glacier rim), at 4:30 p.m. Andrés and Jonathan Oberreuter were waiting on the boat in the water dressed in special suits to receive our "flying speed boat" CECs 2

With the last air freight, the operation was concluded and we were able to test drive the boat CECs2. At night we ate plenty after a hard day's work. Tomorrow we will install the scientific equipment and we hope to begin recording the first measurements.

### **Villa O'Higgins, October 2, 2017**

We have begun a new Patagonian campaign. After one year and 3 months we return to the Southern Patagonian Ice Field (CHS). This time we will concentrate on the northern part of the CHS, particularly on Jorge Montt, O'Higgins and Chico Glaciers. The team includes 6 explorers: Jonathan Garcés, Carlos Fouilloux, Jonathan Oberreuter, Andrés Rivera, Alejandro Silva and Rodrigo Zamora, and their main objective will be to complete several measurements as described in a new FONDECYT project, whose aim is to study the role of underwater melting in the CHS breaking glaciers dynamic. This project is the follow-up to previous CECs' work, which included the installation of GPS receptors, weather stations, photographic cameras, glaciological bases and water pressure sensors in the area.

