ASIAN ALPINE E-NEWS

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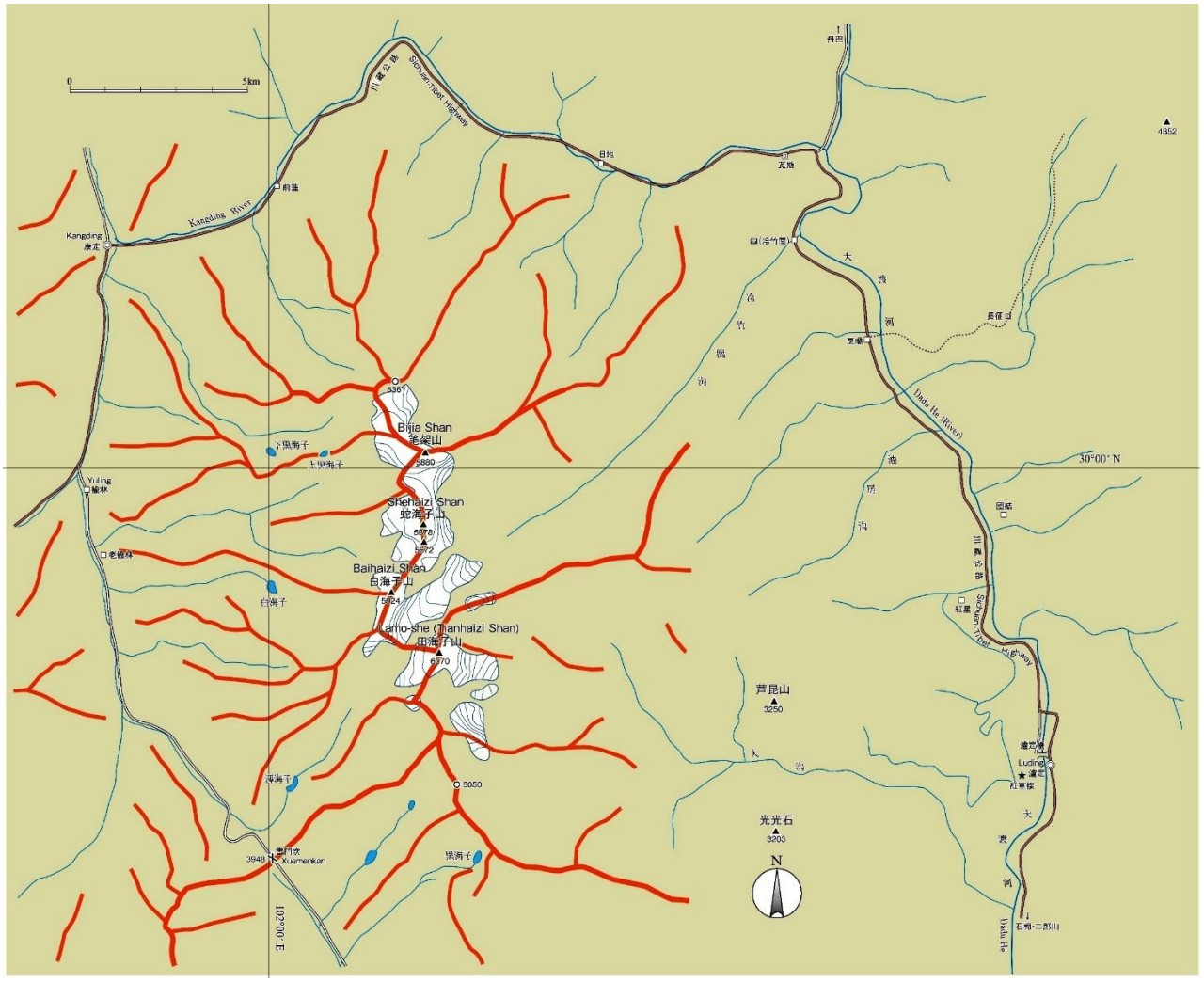
Contents

RACCONTO LAMO-SHE, SICHUAN

Tomas Franchini



In the last period, I realized that what really makes me happy and growing is venturing in new and unexplored places.

This time the adventure has been more intense and adventurous as usual, but as always, the mountain hasn't let me down and through the fatigue has given me great emotions and satisfactions.
Enjoy the read.

Well, let us assume that I left for a place of which I couldn't found much information, as it is a place that had never been visited by climbers neither tourists. Only a local tribe of herbalists had been there before.

The wall, that along with my climbing partner, we were planning to climb was a completely unclimbed wall, therefore we didn't get any information about it.
To complicate the adventure: the difficult weather conditions. For days we have been waiting for good weather, due to the monosomic season. And it is for this difficult weather conditions that a certain point of the expedition, my partner Pietro, with whom I got on very well, decided to go back home.

So, I found myself alone for a month, in the middle of nowhere, in a remote place, completely isolated and totally wild.
Due to the complexity of logistics and the situation, the difficulty of the climbing has increased significantly but anyway this didn't stop my enthusiasm and the desire of trying,
And so, taking advantage of the only mid-day of good weather, I managed to climb the unclimbed east face of *Lamo-She*.

Which material I brought with me? This time nothing. I tried to be as fast and light as possible.

I went up and down in a totally free- solo style, getting at an altitude of 6070 meters, in a single push of 21 hours from the tent to the summit.

I cannot deny that I'm really satisfied and happy of what I have done.

After the departure of Pietro, I'd given up hope of getting to the top and I thought that I would have just explored the area.

In the following days, I also managed to climb two more ascents on some unclimbed peaks in the lagoon created by two big ridges of *Lamo-She.*

On the east ridge I climbed a peak of 500 meters that is detached from the big wall of *Lamo-She*. I named it *Picco's Pietro,* in honour of my climbing partner Pietro.

The second peak is located on the north face, the first fore summit at a height of 4200 meters. I called this peak *Jiyue Shan*, in honour of my Chinese friend who helped us with the organization of the expedition.

I warmly thank my fellow traveller Pietro. I think that without him I couldn't have done it; in the fisrt part of the trip we had to discover the place, install the base camp and transport all the food and material. Without a cooker, we also had to organize all the things in great detail in order to make the base camp a comfortable and nice place.
At the end, I would like to thank all the people who support me, all those who sent me a message before leaving or have congratulated me when I came back.

I apologize if I have been out of touch for a month but sincerely: *it's nice being out of world for a* while.
And after any adventure, being back to the city is really hard.

Tent Lhotse 4


China
Lamo-She Massif
PIETRO'S PICCO- 5000m
east ridge VI° 600m
Tomas Franchini
SOLO
17/05/2019


China
Lamo-She Massif
-JIYUE SHAN- 4200m
D+ N face 400m
Tomas Franchini
25/05/2019

East face of Lamo-She

One of the vertical icy steps

Summit ridge

At the top of Lamo-She

Tomas and villagers after climbing adventure

The Karakorum anomaly

Climate change is a major issue nowadays and by climate change we are speaking not of Climate change itself which has been an ongoing feature for at least 3.5 billion years - the estimated duration of our planets atmosphere but rather the warming of the atmosphere in the last 120 years after the end of the little ice age in the 19th century. Religious texts aside (like the account of the flood and Noah's ark in the Bible) changes in the climate historically have been ascribed to natural causes outside of human influence however the current warming phase has been regarded by many as the result of human activity to one degree or another. One of the major indicators of changing climates is glacial area, volume and mass throughout the World– especially the Antarctic ice cap which now date's back over 15 million years , before the beginning of the current Ice age.Taking ice core samples from them has become one way of determining climate changes during this last 15 plus million years (its thought that glaciers began to appear in Antarctica over 30 million years ago – in the Northern Hemisphere much more recently at an estimated 3 million years). Observation and samples from these glaciers are one of the indicators that during the current Ice age there have been at least 7 periods of large scale glaciation during the last 650000 years with shorter intervals called inter - glacial's between - the one of which we are currently in has been named the Holocene (start -approx 11,650 years ago).

Large scale changes to glaciers are a reference to possible changes in climate and atmosphere and many of the worlds ice mass's have been observed to be contracting over the last 120 years . Generally this contracting behavior has been increasing with a higher rate in the last 30 years. The Karakorum anomaly – now extended to the Pamirs and some other ranges in Western Himalayas and Asia is called an anomaly because the Karakorum glaciers seem to be either stable or growing during this last 30 year period . This anomaly is not exclusive to these mountains but these are the largest geographical area's currently anomalous to the general trend of contraction outside of the polar circles .

Why are the Karakorum's important ?

The Karakorum's , Pamirs and Western Kun Lun mountains are all considered part of the anomaly and these 3 ranges constitute some of the largest glacial ice areas/volumes outside the Poles. The Baltoro Glacier is an example. This one Glacier (second largest) in the Karakorum has a surface area of just over 800 KM squared , that is an area roughly comparable to the entire Glacial area in the Southern alps of New Zealand . However the ice volume of the Baltoro is estimated at variously between 100 and 260kms cubed , compared to a cubic value for the whole Southern alps of just 40 kms . ie the Baltoro Glacier is 2 ½ to 6 ½ times larger by volume. At the figure of 260kms cubed a 15 per cent decrease in the ice present in the Baltoro would equate to the loss of all the glacial are in the Southern alps. However the Baltoro is just one Glacier of many in the Karakorum whose total ice

area is variously estimated at between 2500 to over 3000 km's cubed in an area of just under 18000 km squared. Thus the area of the Karakorum is 22 times greater and ice volume estimated as 75 times greater than the Southern Alps – a very small decrease of 1.5per cent of the Glacial volume of the Karakorum thus equates to the loss of the entire volume of the Southern alps. (Thus far there are no accurate definitions/measurements to what actually constitutes the area of various glaciers that make up the Karakorum and what there actual depth is so figures are a guide only concerning the Karakorum.)

The study of Glaciation in the Karakorum

Glacial observations have been made in Europe since the 16th century but scientific studies only began in the 19th century. The mid 19th century was also a "cold snap" that reinvigorated Glaciers Worldwide back to their maximum extent during what is known as the "little ice age" – a period of Global cooling between the 14th and 19th century's. This cooling in the Karakorum lead to several rapid Glacial advances called surges which and created ice dams and blocked rivers. When some of these collapsed they caused catastrophic floods in what was than British India. This lead to some of the first research into Glaciers in the Karakorum which paralleled the efforts of the explorers that started penetrating the regions and mapping them. During the 1920's and 1930's in the late British imperial period much of the Karakorum was surveyed and the Glaciers observed and more accurately measured. Kenneth Mason in particular cataloged and photographed them in detail. To a certain extent these observations still remains the best source of information on the Glaciers in the Karakorum.

Glaciologist's were some of the toughest scientists , trekking alongside explorers and mountaineers and field research was the primary way of gleaning knowledge although Aerial photography began to enhance their explorations especially after the Second World war. The real leap in the study of Glaciers was satellite photography starting in the 1970's. No longer did a Glaciologist have to leave his office and rough it!

The Glaciers in the Karakorum remained very understudied after 1948 and the dissolution of British India – even more so than the glaciers in the rest of Central Asia being nether part of the Russuian or Chinese spheres of influence . Another Kenneth - Kenneth Hewitt ,a field researcher by nature, published the somewhat seminal work in 2005 "The Karakorum Anomaly? Glacier Expansion and the 'Elevation Effect,' Karakorum Himalaya" in which he bought to attention the widespread Glacial expansion noted since the 1990's in the Karakorum. This paper along with an increasing number of Glacial surges causing Glacial dams and potential floods has made for a large increase in research into the Glaciers in the Karakorum region in recent years. The Western Himalaya , Pamirs , and Western Kun Lun also all tend to exhibit the same general trend of stable or increasing ice mass as

the Karakorum and this has just begun to be studied. Most of this research has been in the form of interpreting satellite pictures and maps.

The importance of field research

Although interpreting data from Satellite images has lead to a wealth of new information on Glaciers there is especially in remote and difficult regions a real lack of in depth of on the ground field research – like having a great map – it's an indication of the the territory, not the territory itself.

Kenneth Hewitt explains why field research is essential to Glaciology in the paragraphs below

"However, most evidence for the expansions detailed here is not readily deduced from available satellite coverage. The ice-margin features, processes, and purely vertical shifts identified with thickening—or thinning—are too localized, or masked amid debris-covered ice of the termini and lateral margins"

It should also be said that the difficulties of identifying most of these changes on satellite imagery apply equally to past and on-going thinning, retreat, and stagnation. These changes cannot be deduced from comparisons of 1980's, 1990's, and 2000 LANDSAT imagery. Again, the problem for available technology is identifying purely vertical changes of less than 10–15 m, and heavy debris covers that tend to mask horizontal changes."

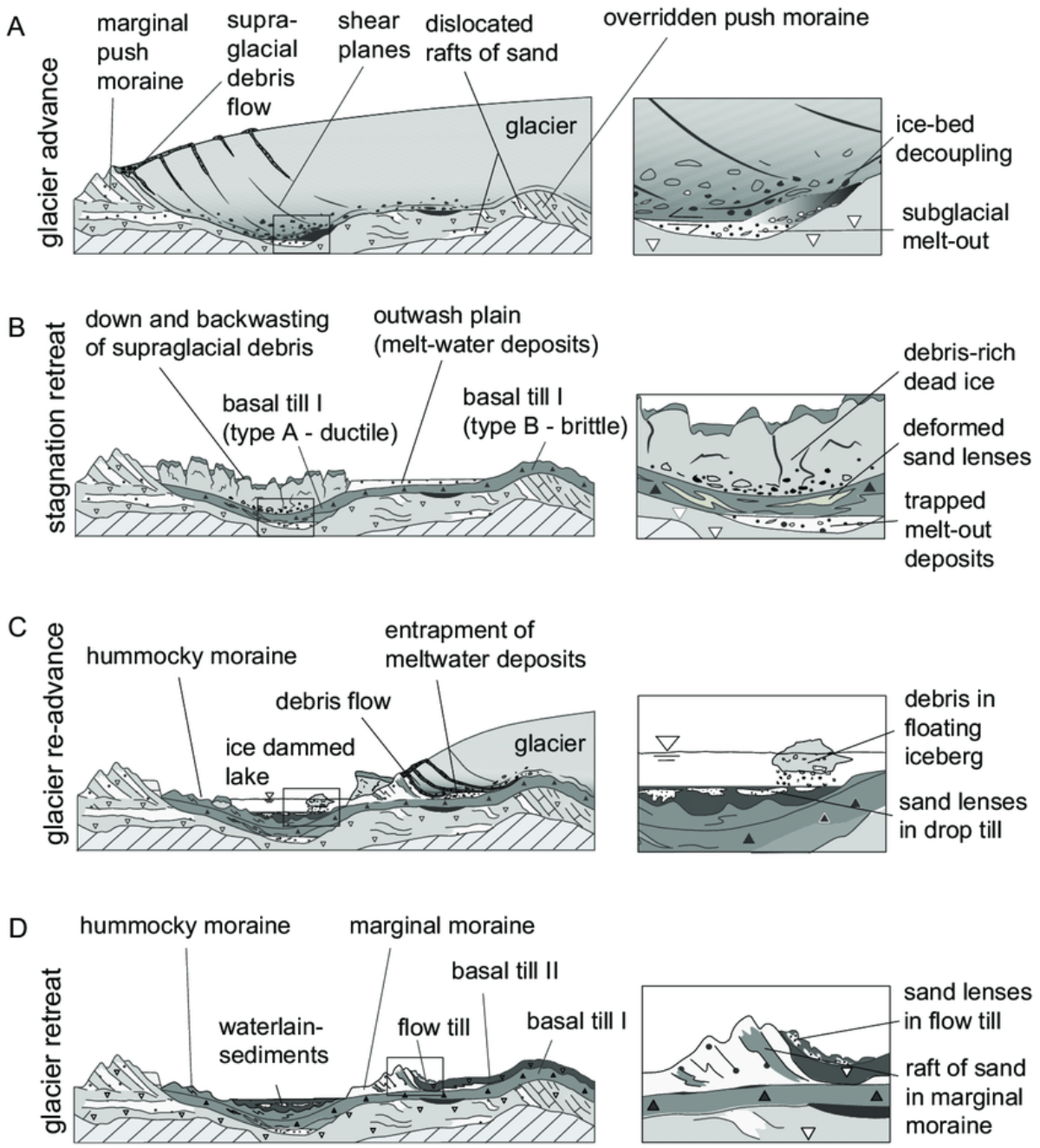
There are many reasons for the lack of field research in the Karakorum. Undoubtedly one is the researchers them selves – one doesn't necessarily become a scientist to make one self uncomfortable by going out on the field when one can sit, coffee in hand behind a screen analyzing data. This is just one limitation. (Conversely, one could say the average mountaineer or trekker has no interest in scientific research on the field or otherwise). Too succeed in being a field researcher one needs a blend of scientist and outdoors man – a blend not often found.

Field research here in New Zealand , indeed in the Alps of Europe or Japan , even in North or South America is relatively easy. Access is not a formidable problem, most mountains are close to towns/cities and advanced forms of transport such as aircraft and helicopters are used. Glacial areas are small generally and easily observed and extreme weather / altitude conditions rarer or non existent.

Field research in Central Asia is altogether different. Although being on the ground would seem evidently far superior for gathering “real” information this is not necessarily true. Long spells of bad weather , roads and routes that are washed out and just the general nature and vast size of the terrain not to mention extreme’s of weather and high altitudes can make field research all but impossible for long periods of time. Naturalist George Schaller in his book Wild Tibet notes that some of his trips on the Chang Tang plateau revolved around pure survival and that often he spent days observing little or anything. This lead’s onto the number 1 problem of field research in Central Asia – cost – any scientific field expedition is going to require major funding as opposed to satellite imagery which is practically free. In the heyday of mountain of Himalayan exploration and climbing (1890’s thru 1960’s)scientists accompanied most expeditions and indeed reports from expedition non scientific members would be presented and published in scientific and geographical journals – these days are long over.

Observing Glacial change

I used the diagram and information below as a my criteria for any judgement on glacial changes. Generally large scale changes both growth and contraction are much more easily observable than stagnant or near stagnant conditions.



Kenneth Hewitt's criteria for advancing Glaciers is listed below –

1. Well-defined line of shear between active ice and passive margin.

2. Continuous sections of ice cliff rising steeply to the glacier surface, or over-riding and overhanging the glacier margins.

3. Fresh ridges of lateral moraine beside the line of shear,

4. Supraglacial debris and ice blocks shed from overhanging ice onto the valley side flank of lateral moraines and into the so-called 'ablation valley' trough.

5. Reduction or closing of crevasses except on icefalls where they may increase

6. Closing of ice margin conduits to subglacial drainage and ponding of water at the ice edge.

Observations

– in photos. whilst travelling in the Karakorums in July , August 2014,2015,2019

2014

Western Karakorum

Below - Effects of a Glacial dam burst. This is the Gulkin Glacier above the KKH near Passau which has seen several burst's over recent years . I arrived there hours after the Glacier burst on the 27th July 2014 closing the Karakorum highway for 10 days. These type of Glacial dam burst's go entirely unreported outside of local circles although most residents in the Hunza valley live in constant threat of them – especially in the last 20 years with the big increase in Glacial surging and dams. Currently the rapid advance of the Shispar glacier has formed a glacial lake which threatens the whole valley. (https://www.dawn.com/news/1464135)
https://earthobservatory.nasa.gov/images/145038/surging-glacier-creates-a-new-lake

The entire highway was wiped out for a stretch of approx 1km by ice and rock debris.

A digger attempts to rescue Chinese road worker trapped mid flood.

The Barpu Glacier – showing signs of advance onto old lateral moraines.

The Barpu from above.

The Glacier below 6294m (Above the Barpu)– this one showed high old terminal remants and a glacier that has retreated – the only evident ongoing retreat noticeable in the time I took pictures in the Karakorum

The Pasu Glacier – high moraine walls suggest significant retreat from past high's from this long Glacier – it is the only large glacier I have seen in the Karakorum with such high old moraine walls.

Reports say the Pasu is fluctuating presently. Studying the ice close up below its hard to say excatly – perhaps a retreat with stable or growing conditions at time of photo .

Pasu Glacier – the ice goes right up to the moraine walls which suggest that the glacier is in a growth phase – despite the high moraine walls meaning it has lost substantial mass sometime since the last major glaciation 13’000 years ago if not much more recently – since the little ice age perhaps.

2015

Central Karakorum, Baltoro

the Goodwin Austin , just below Broad Peak , Glacier is stable and probably growing – no evidence of past glacial action above the glacier suggesting it is at a high piont.

Looking down Broad peak to the confluence of the Goodwin Austin and Savioa glaciers – Savioa to left which also shows growth.

The Goodwin Austin Glacier as it Curves NE between K2 and Broadpeak – it is full.

The Yernanandu Glacier with Masherbrum behind.

This glacial lake was very noticeable in 2015 , I never saw it this year , just some small ponds in same location.

2019

Central Karakorum , Baltoro , Vigne, Gundergoro glaciers

Terminus of the Baltoro Glacier - this has not changed since 1984 – the oldest Google earth sat images I have.

where there was a glacial lake is now just a few ponds .

The terminus of the Yernanandu Glacier that comes from Masherbrum and descends onto the Baltoro. seems to be growing. 5 years ago the trekking route was underneath the terminus – this is now cut off – however glaciers are dynamic in many ways so the reason may not necessarily be growth of the glacier.

another view the terminus of the Yernanandu Glacier that comes from Masherbrum – highest mountain in the picture.

Looking over the Baltoro up the Biange glacier towards the Mustagh Tower – the Biange looks full.

Hanging Glacier showing rapid growth – opposite Paiju camp – True left of Baltoro Glacier

Another rapid growth hanging glacierabove the Baltoro.

The Baltoro is vast and I noticed no real differences over several years but there was far less water running on the surface this year. In 2015 the hot, humid monsoon had reached the Karakorum making for much warmer conditions than 2019. The monsoon doesn't often penetrate so far.

This ice river was still present

Drone photo - looking down the Goodwin Austin glacier to Concordia - note the full appaerance

Drone photo – looking at Goodwin Austin glacier below Broad peak – ice is hard up against mountain.

Drone photo – looking at Goodwin Austin glacier below Broad peak – ice is hard up against mountain.

Drone photo – looking at Savio Glacier belowK2– ice hard up against mountain wall to left and the vast arc of recent rubble pushed hard against the mountain wall on right of picture.

Drone photo – looking at Savioa Glacier below K2– ice hard up against the mountain's suggestive of very recent Glacial growth..

Looking over the Terminus of the Vigne Glacier – the Vigne is showing a fairly comprehensive advance. (Mountains in back ground include K2 , Broad Peak , Gasherbrum 1 , 2 and 4)

The Vigne is smooth , crevasse free and the ice rises smoothly to the sides of the mountain walls.

Drone shot of small Glacial lake just north of Ali camp on the Vigne glacier. An ice dam blocks the outlet – I thought this maybe a recent feature due to growth of Vigne but it has been there some decades in Satellite photos. In satellite photo's it seems the Vigne has grown but again with such photos difficult to say – actual field observation is superior.

On the Gundergoro Glacier – the Gundergoro Glacier was interesting , showing growth as in picture above but also some older moraine walls that suggested in one stage in recent past it was larger – whether that was just 120 years ago in the little ice age or thousands of years ago was all conjecture for me. Laila peak in back ground.

Camp Khuispan at the Confluence of the Gundergoro Glacier and a glacier Khursipan?? Big moraine walls have been pushed up by each glacier at the convergence .

Hanging Glaciers on the mountains true left that rise over the Gundegoro Glacier

Looking back upthe Gundergoro from the same piont – the moraine walls are growing having been bulldozed up over the green vegetation .

The confluence of the Gundergoro and glaciers coming from the Masherbrum group to the North.

Just before Saitcho camp – Descending the large moraine wall to camp , evidence of much larger previous glaciers can be seen on the mountain walls of this now ice free part of the valley.

Descending to Saitcho below , it’s hard to tell how long the valley has been ice free.

Bondit Glacier in Central Karakorum , tributary of Apobrock river going to Hushe valley. 2019

Terminal moraine of the Bondit glacier below Bondit peak. It appears to be advancing but satellite photos indicate no change in position since 1984.

Drone picture , flying over the true left of the Bondit Glacier , recent moraine debris and a full Glacier.

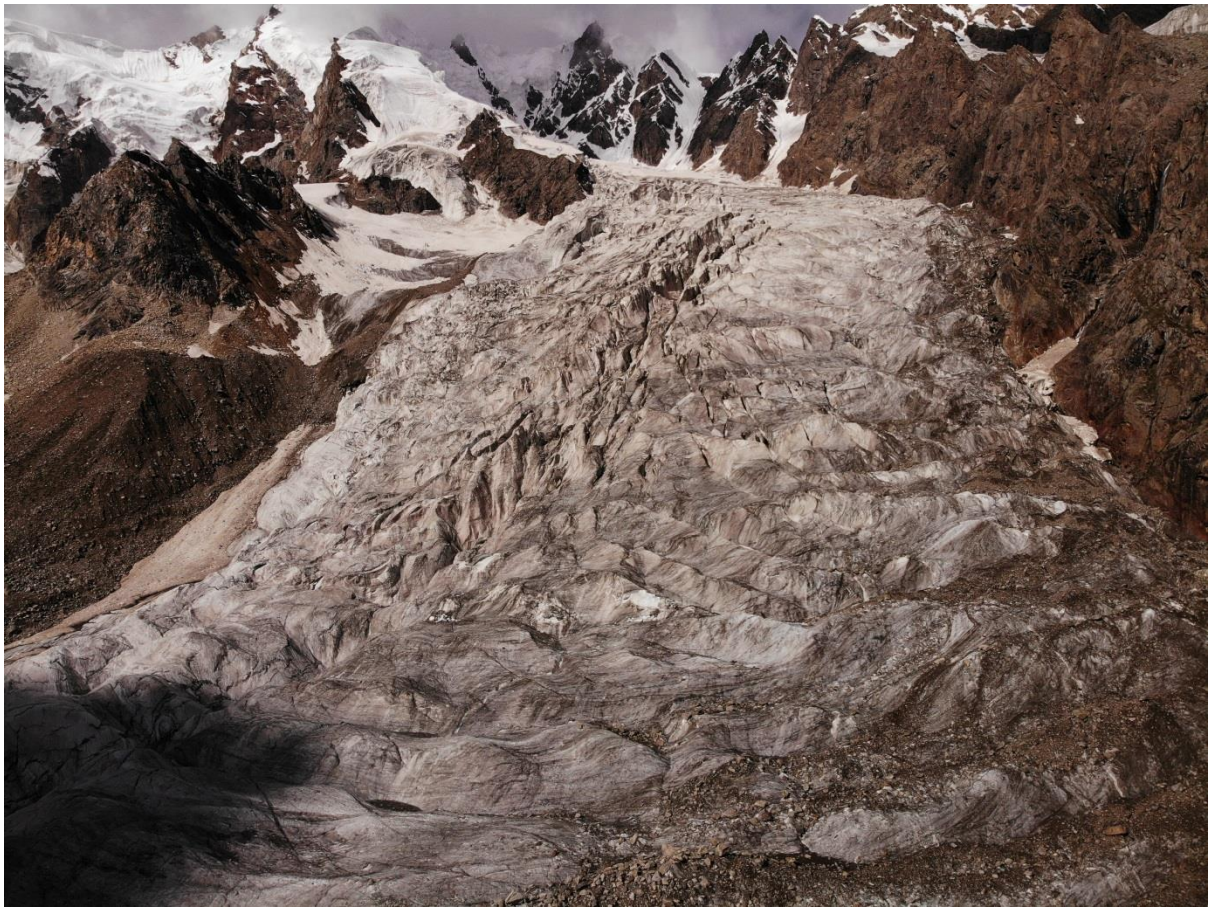
The active Bondit Glacier – upper mountain section and hanging glacier on the peak to the right which we called unknown mountain. Both provided constant excitement!!

Another overflight over the Bondit moraine showing very recent uplift of moraine walls (caused by the glacier bulldozing the rock's from underneath)

Aerial view of lower Bondit glacier

Aerial view of upper Bondit Glacier feed by several ice streams off Bondit peak.

Another view down Bondit towards Hushe valley – with the mountains around Nangma valley in the distance.



Looking directly up the icefall. note moraine center left which is only suggestion I saw on Bondit that ice may have covered a larger region in past.

Large ice walls and serac’s are very active on the NE face of Bondit.

Looking up from Bondit base camp at the two valleys rising approx 500 -600 vertical meters west of camp - both lead to small glaciers below peaks of 5200 to 5400m in height. The valleys themselves had been more heavily glaciated at one time in the past – the glaciers on top were both full and active.

drone picture - note figure center picture and the pilot (myself)for scale. This is the small glacial valley directly above Bondit Basecamp on the left side of the previous picture. The white ice starts at approx 4800m – the Glacier levels off to a flat basin at approx 4900m. Rocks were being pushed down the valley while we were there!!

Findings

Specific Conclusion

During the last glacial maximum – over 11’500 years ago the Karakorum was covered by an immense ice sheet at a far higher altitude than any present glacier. Therefore any evidence of past glacial action that can currently be observed on the field regards ancient moraines , scouring on mountain walls etc must be within the 11’500 year time frame – indeed the dynamic nature of the glaciers – not to mention geological movement and action means many observations about Glacial change are more in the region of 100’s of years not 1000’s.

My observations would be:

1) Glacial regression was observed in the Western Karakorum's in more than one glacier – the Pasu in particular had very high moraine walls indicating a much larger Glacier sometime in the past

(past meaning this last 11’500 years). The Pasu is possibly fluctuating or even growing but from a low point.

2) The Baltoro seems stable in the central Karakorum.

3) All the other glaciers observed seemed to be stable at high point's or growing.

4) Satellite pictures and ground based stations indicate that recent winters in the Karakorum have had heavier precipitation , summers are cooler with more cloud cover (some studies mention up to 2 degrees lower.) Local observations agree with the heavy winter snowfalls. (locals told me in 2014, 2015 and again 2019 that there had been extremely heavy snow falls that winter) Glacial Surges have (dramatically) increased tending to indicate general glacial growth . Both field and satellite observations show the majority of Karakorum's glaciers as stable for the last 30 years and in many case’s growing.

My own layman's field observations would tend to confirm the current scientific assessment that the Karakorum glaciers are mainly stable or in growth phase’s.

General conclusion

My own knowledge of Glaciers is limited so I restrict myself to observation . Theory’s about why and how there is an apparent anomaly of the Glaciers in the Karakorum I leave to others.

I have two things to say about enhancing field observations though.

Even with my limited piloting skill and a small drone it was very useful in taking video film and photo’s. I would dare to suggest that in the near future a small low cost expedition equipped with a drone could potentially garner far more information in a far shorter period than even the most elaborate expeditions of the past.

With the Karakorum being such a vast reserve of ice and “climate change” being such a major scientific and political issue one would expect to find the area crawling with investigative field scientist’s – this is clearly not so and I don’t see any change to that in the future. However the whole area see’s many trekkers, mountaineers and general adventurers not to mention locals who visit the glaciers every year. With modern digital photography, GPS and drones (and computer analysis to subsequently define mass’s of data) these people are a vast so far unused resource for field observations. Even if a small percentage of these people in the group above sent in photo’s and observations of the places they visited it would be far more than any likely present or future observation's by the limited pool of field researchers. The system would work somewhat akin to the world of amateur and professional astronomers – where the amateurs collect mass/ raw data and the professionals analyse that data and do in depth field studies on areas of particular interest.

Information Sources

My own layman's field observations would tend to confirm the current scientific assessment that the Karakorum glaciers are mainly stable or in growth phase’s.

The last 5 years has seen a large increase of Scientific literature on the Karakorum anomaly available on the internet – most articles can be accessed free although some are only available by payment or if you are the member of a scientific institute. Back issues of the Himalayan , Alpine , and Geographical journals – all available on the internet have a vast amount of literature on the glaciers of the Himalayas – very useful for researching before 1940.

There are also a wide range of satellite pictures available – Google Earth ones are generally good back to about 2000 , before that images are hazy at best. Probably better images are available for institutions or by pay.