Hidden 47 Six-thousanders in the Kangri Garpo Mountains

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◆ Introduction

The 280km-length Kangri Garpo Mountains lies on the east Tibet from Tongmai to Zayul near the great bend of Yarlung Zangbo. In 1933, a plant hunter Frank Kingdon Ward visited Ata Qu and passed Ata Kang La. He took a picture of Choembo (Fig.1), the highest peak in the Kangri Garpo Mountains. He supposed that he had seen the summit. It was a remarkable exploration to the range where he made the first discovery of the highest peak. The peak Choembo is called Ruoni Feng or Bairiga (6882m) today. Kangri Garpo has still many unexplored valleys and mountains to date. The said old picture motivated us to study and plan expeditions to Kangri Garpo. But we could not identify the picture taken by F. Kingdon Ward for many years. A picture taken from Camp-3 by the Alpine Club of Kobe University (ACKU) in 2009 and a picture from the south on the Bimaque Glacier(or the Ata Kang La Glacier) near Ata Kang La by JAC Ski party in 2008 clearly projected Ruoni Gendarme I (KG-112 6289m) that is also seen in the picture of F. Kingdon Ward. Those are definitive evidences of the camera location of F. Kingdon Ward. His picture captured the fore-summit on the south ridge of Ruoni.

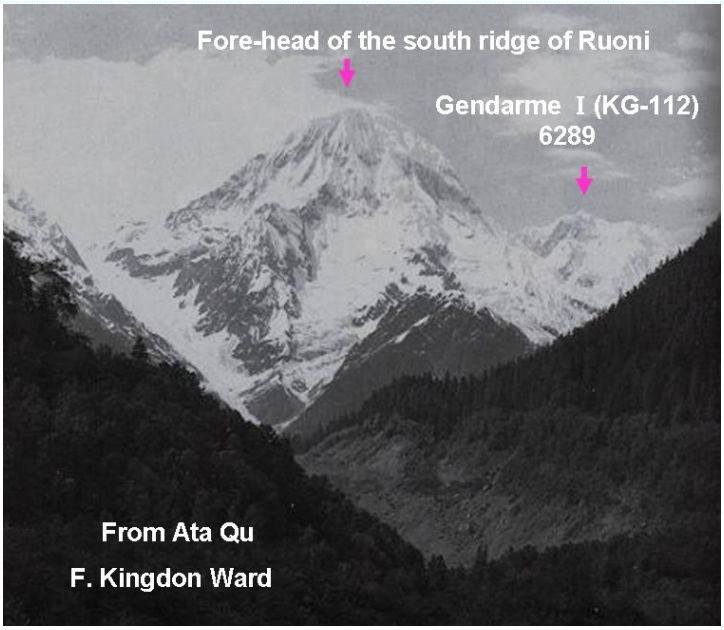


Fig.1 Choembo from Ata Qu

Questions raised during my studying peaks are as follows;

1) The order of altitude around “Three Ata Sisters”; (We refer to KG-1, KG-2 and KG-3 as Three Ata Sisters)
2) The altitude of KG-1 (Ruoni)
3) Where is P6443m (KG-37)?
4) The ridge connection around the watershed of the Ata Glacier
5) Which peak is the highest in the Lhagu Glacier, KG-17 or KG-18 (Gongyada)?
6) Which peak is the fourth highest in Kangri Garpo, KG-37, KG-18 or KG-17?
7) Figure of mysterious Kone Kangri (KG-51)
8) Visibility of P6327m (KG-22) and KG-23(6010m)
9) Existence of Gheni Ⅲ(KG-38 6020m) and KG-26(6000m)
10) A pass between the Ata Glacier and the Lhagu Glacier

11) Existence of P6082m (KG-35) on the west ridge of Ruoni (KG-1)

The first ascent of a mountain, "White Hawk" Lopchin Feng (KG-2, 6805m) was made by two Tibetan students, Deqing Ouzhu and Ciren Danda, on 5th November 2009, and two Japanese, Masanori Yazaki and Koichiro Kondo (student), on 7th November 2009; the Joint Scientific and Mountaineering Expedition organized by ACKU and the Mountaineering Association of Chinese University of Geosciences (CUG, Wuhan) led by co-leaders Tim Inoue and Dong Fan. This is the only one climbing record out of 47 six-thousanders through the range to date.

◆ List of Six-thousanders (List.1)

It is surmised that 100 or more un-climbed five and six-thousanders exist in the range. No one clarified the whole picture of peaks till today. The purpose of this article is to introduce unclimbed, unknown and hidden Six-thousanders in the range.

I studied the mountains through existing reports and pictures taken by the explorers such as Tom Nakamura, Yukio Matsumoto, Kazuki Tsuji, Hideki Watanabe, Takeru Nakayama, Tairou Tokunaga, Haruhisa Kato, Hidehiro Ito, Osamu Matsuo, Kaneshige Ikeda and Hideo Nishigori in addition to our photos and report of the ACKU expeditions in 2002, 2003, 2007 and 2009. They provided me many important data. I appreciate their contribution to this article.

The sketch maps shown in this report were charted by me based on the Google Map with peak numbers "KG-##", names and altitudes that were the result of peak identification through analyzing photos and reports. The altitudes and locations shown in the 47 peaks list (List.1) are much relied on ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer) GDEM (Global Digital Elevation Model; Map Datum WGS84). The altitude estimation partly referred to existing Chinese maps (Chinese People's Liberation Army(PLA)) , old Soviet Union maps and the sketch map attached to the book "East of Himalaya; the Kangri Garpo Mountains" edited by Yukio Matsumoto. To estimate altitude of peaks, ASTER GDEM was more reliable than the data extracted from Google Earth, Google Map and SRTM (The Shuttle Radar Topography Mission). I have mostly chosen the highest numbers of altitude in the 47 six-thousanders if the peaks have multiple data sources. The list includes in minor peaks which I have decided as minor with my subjective opinion. I can not conclude that there is no more hidden six-thousander in the range. I hope anyone will quest and find more peaks.

I found a few tendencies that the altitude data extracted from ASTER and Google Earth indicates lower height numbers on the sharp or thin summit structure peaks than that of actual numbers and little lower numbers on the massive or round shape summit peaks. I assume that all data extracted from the satellite survey indicates

lower than that of actual.

NO	Peak ID	Name		Altitude(m)	°	′	″	°	′	″	Comment
					Location N			Location E			
1	KG-1	Ruoni	Bairiga	6882	29	9	60	96	43	24	The Highest Peak in the Kangri Garpo Mountains
2	KG-2	Lopchin		6805	29	11	59	96	41	39	1st Ascent by ACKU , 2009
3	KG-3			6726	29	13	45	96	40	52	
4	KG-37			6554	29	14	28	96	40	18	KG-3-Ⅱ Soviet U P6443m
5	KG-17			6536	29	22	35	96	30	28	The Highest Peak in the Lhagu Glacier
6	KG-18	Gemsongu		6525	29	23	26	96	29	41	
7	KG-12	Gongyada		6482	29	19	24	96	36	29	Hiqen-1
8	KG-9	Luqendo Ⅰ	Ⅰ-1	6449	29	17	1	96	39	27	
9	KG-33			6441	29	10	24	96	42	7	Satellite Peak of Ruoni
10	KG-10	Luqendo Ⅱ	Ⅱ-1	6390	29	17	58	96	38	54	
11	KG-16			6377	29	21	60	96	31	24	
12	KG-34	Noi		6377	29	23	20	96	30	37	Lhagu Glacier Origin
13	KG-9	Luqendo Ⅰ	Ⅰ-2	6350	29	17	2	96	39	15	
14	KG-15			6350	29	21	47	96	32	5	
15	KG-51	Kone Kangri	Ⅰ	6347	29	37	7	96	3	18	
16	KG-52	Delupola	Ⅰ	6343	29	39	18	96	2	25	
17	KG-5			6340	29	15	18	96	41	28	
18	KG-22			6327	29	6	52	97	4	39	P6327m
19	KG-9	Luqendo Ⅰ	Ⅰ-3	6306	29	17	10	96	38	48	
20	KG-14			6293	29	20	60	96	33	13	
21	KG-4			6290	29	15	45	96	40	19	
22	KG-112	Ruoni Gendarme	Ⅰ	6289	29	10	26	96	44	26	Ata Glacier
23	KG-10	Luqendo Ⅱ	Ⅱ-2	6278	29	17	41	96	38	29	
24	KG-19	Hamokongga		6260	29	24	18	96	36	3	Dojizandoi
25	KG-41			6238	29	25	54	96	21	42	
26	KG-20	Genikutz		6233	29	24	6	96	26	41	
27	KG-39			6211	29	23	48	96	28	43	Midui Glacier Divide
28	KG-13	Zeh		6177	29	20	16	96	36	57	Hiqen-3
29	KG-24	Gheni	Ⅰ	6150	29	11	51	96	58	10	
30	KG-51	Kone Kangri	Ⅱ	6143	29	36	25	96	4	44	
31	KG-52	Delupola	Ⅲ	6140	29	38	58	96	4	19	
32	KG-40			6101	29	24	6	96	27	49	Midui Glacier Divide
33	KG-11			6091	29	18	40	96	36	34	Hiqen-3
34	KG-25	Gheni	Ⅱ	6085	29	12	9	96	57	3	
35	KG-35			6082	29	7	31	26	33	21	West Ridge of Ruoni
36	KG-55			6077	29	33	15	96	0	54	
37	KG-6	Ⅰ		6076	29	15	56	96	43	3	
38	KG-52	Delupola	Ⅱ	6065	29	38	46	96	3	31	
39	KG-57		Ⅰ	6050	29	37	36	95	53	39	Dong Chu Zangbo / Ⅲcan be seen from Parlung Zangbo
40	KG-51	Kone Kangri	Ⅲ	6041	29	36	32	96	5	26	
41	KG-54			6040	29	34	14	96	3	4	
42	KG-6	Ⅲ	Zyaddo	6025	29	16	10	96	44	3	
43	KG-38	Gheni	Ⅲ	6020	29	12	49	96	56	29	
44	KG-23			6010	29	9	21	97	1	59	
45	KG-6	Ⅱ		6003	29	16	19	96	43	28	
46	KG-21			6000	29	22	59	96	25	25	Xinguo Longba Divide (South of Mimai)
47	KG-26			6000	29	12	27	96	54	40	Little Gheni Glacier

List. 1 47 Six-thousanders in the Kangri Garpo Mountains

6 peaks are still unknown and unveiled.

◆ Peak Identification

The Kangri Garpo Mountains is large and still unknown. I hope I will be given further more information by visitors and climbers who will visit the range. I

recommend them to take pictures with GPS data. Even though he or she takes a picture without knowledge of a mountain, it is possible to identify later if the digital photo data has time and location.

The Six-thousanders stand on the five areas.
(1) Delupola - Kone Kangri Range (Map-1 and 2),
(2) Genikutz - Gemsongu Range (Map-3),
(3) Lhagu Glacier Range (Map-4),
(4) Ata Glacier Range (Map-5 and 6)
(5) Gheni Feng Range (Map-6 and 7)
According to this classification, I have tried to identify peaks on the pictures and locate peaks in the sketch maps.

(1) Delupola - Kone Kangri Range (Map-1 and 2)

Questing six-thousanders in the map or GDEM data is very patient. But it is exciting if a possible six-thousander is discovered. There are supposed to be 9 six-thousanders in this range. The highest two peaks are Kone Kangri (6347m) and Delupola (6343m). These peaks are identified in the Chinese topography, but no name was found in the map.

Passengers travelling the Road G318 along the Parlung Zangbo near Song Zong have often seen the Delupola Group. The group has three peaks of Delupola Ⅰ (6343m, main peak), Ⅱ(6065m) and Ⅲ(6140m). Tom Nakamura, Hideki Watanabe and I took pictures of these peaks. (Fig. 2)

From the Road G318, Tom Nakamura took a picture of KG-79 (5841m) and KG-57 Ⅲ (5700m) standing alongside (Fig. 3). He supposed to aim KG-57(6000m, one of hidden six-thousanders), but the main peak of KG-57 could not be seen from the Road G318. He took a picture of KG-57 Ⅲ.

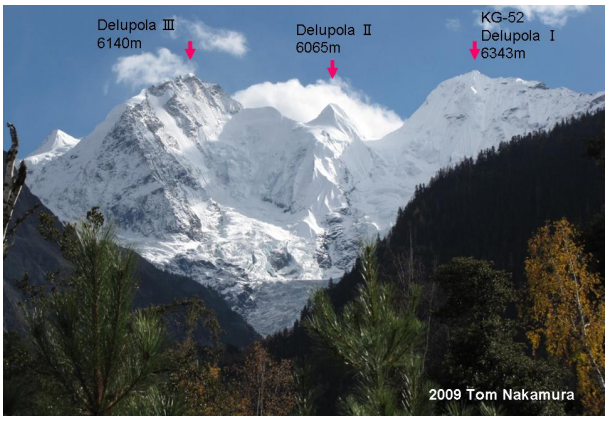


Fig. 2 Delupola

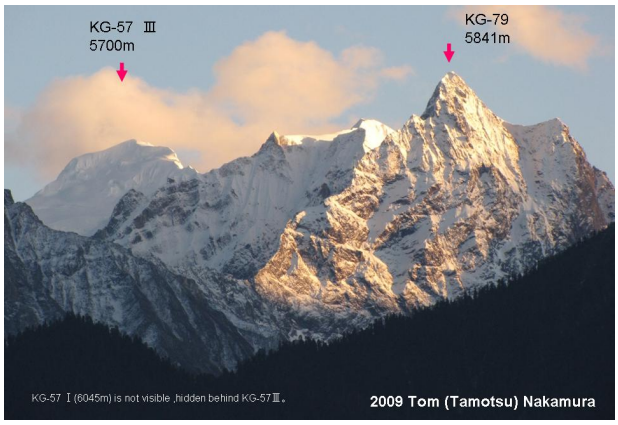


Fig. 3 KG-57 Ⅲ

◆ Discovery of Kone Kangri (6347m)

In September and October 1999, Hideo Nishigori and his Gakushuuin University party explored the Gone Glacier to find possible climbing route to Kone Kangri. They reached upper side of Gone Lake just on the snout of the Gone Glacier. They could not see the peak and no route to the top were found.

In autumn 2009, Tom Nakamura trekked in the valley of Dong Chu Zangbo and reached the deepest confluence. He could take nice pictures of Delupola (6343m) and Kangri Karpo (5470m), but Kone Kangri was not visible from the valley where his party stepped on.

In late autumn 2009, Shigeaki Yamamoto who was the climbing leader of the Lopchin Feng Expedition (organized by ACKU and CUGW) took a picture toward Kone Kangri range at N29° 03'43" E96° 18'04", altitude 3500m on the Road G318, in the upper valley of Yupu Town (Fig. 4). He did not distinguish that the picture captured the summit of Kone Kangri and the north ridge linking to Delupola Ⅱ. Recently I happened to find the shot and identified the appearance of Kone Kangri in the picture through my analysis work. The date and time of the digital picture and the GPS data provided me the location of the shot. The 3D image extracted from ASTER GDEM and Google Earth were good evidences of my peak identification. This is the first discovery of Kone Kangri figure. Kone Kangri group has three peaks, Kone Kangri Ⅰ(6347m), Ⅱ(6143m) and Ⅲ(6041m). The appearance of Kone Kangri Ⅱ and Ⅲ are not captured to date.

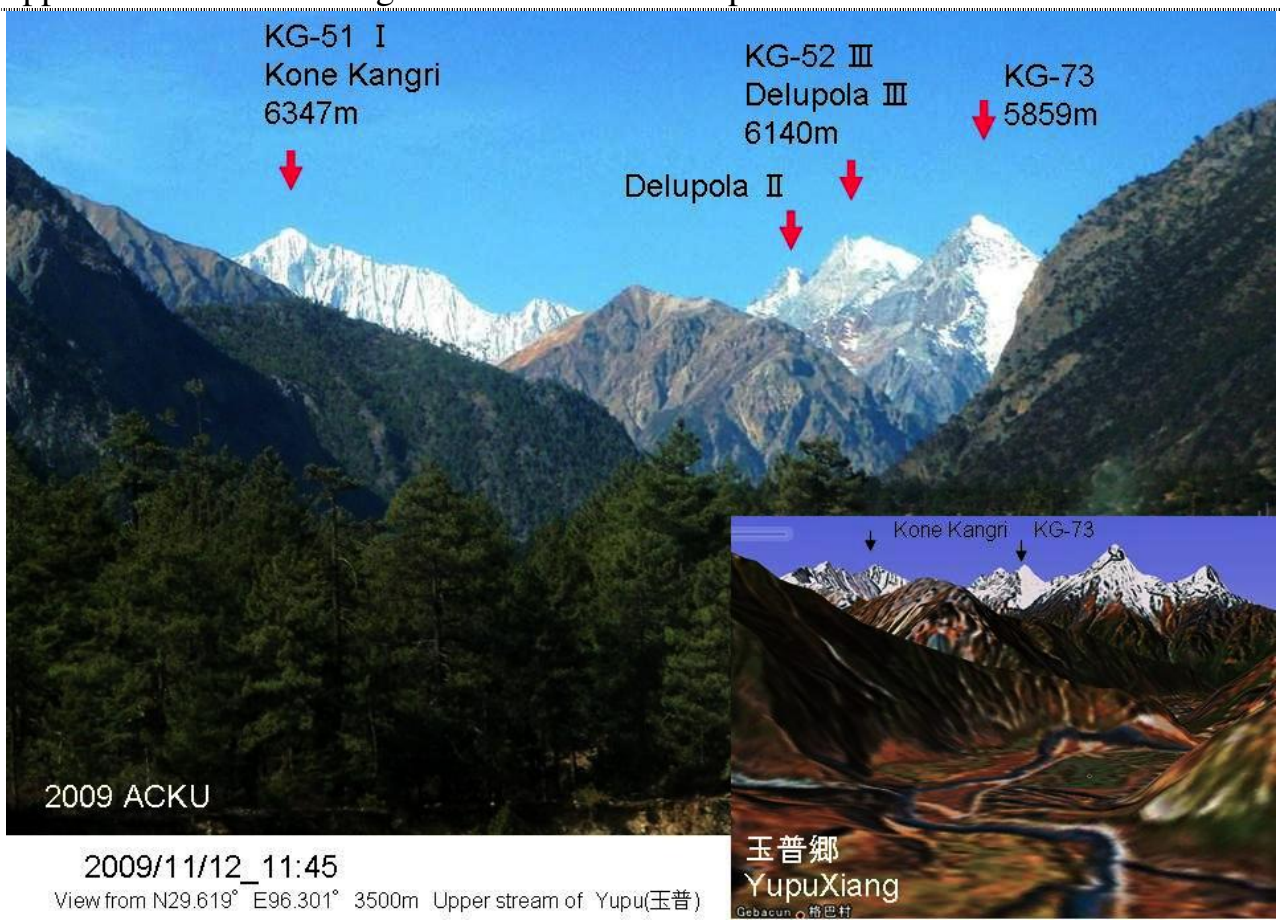
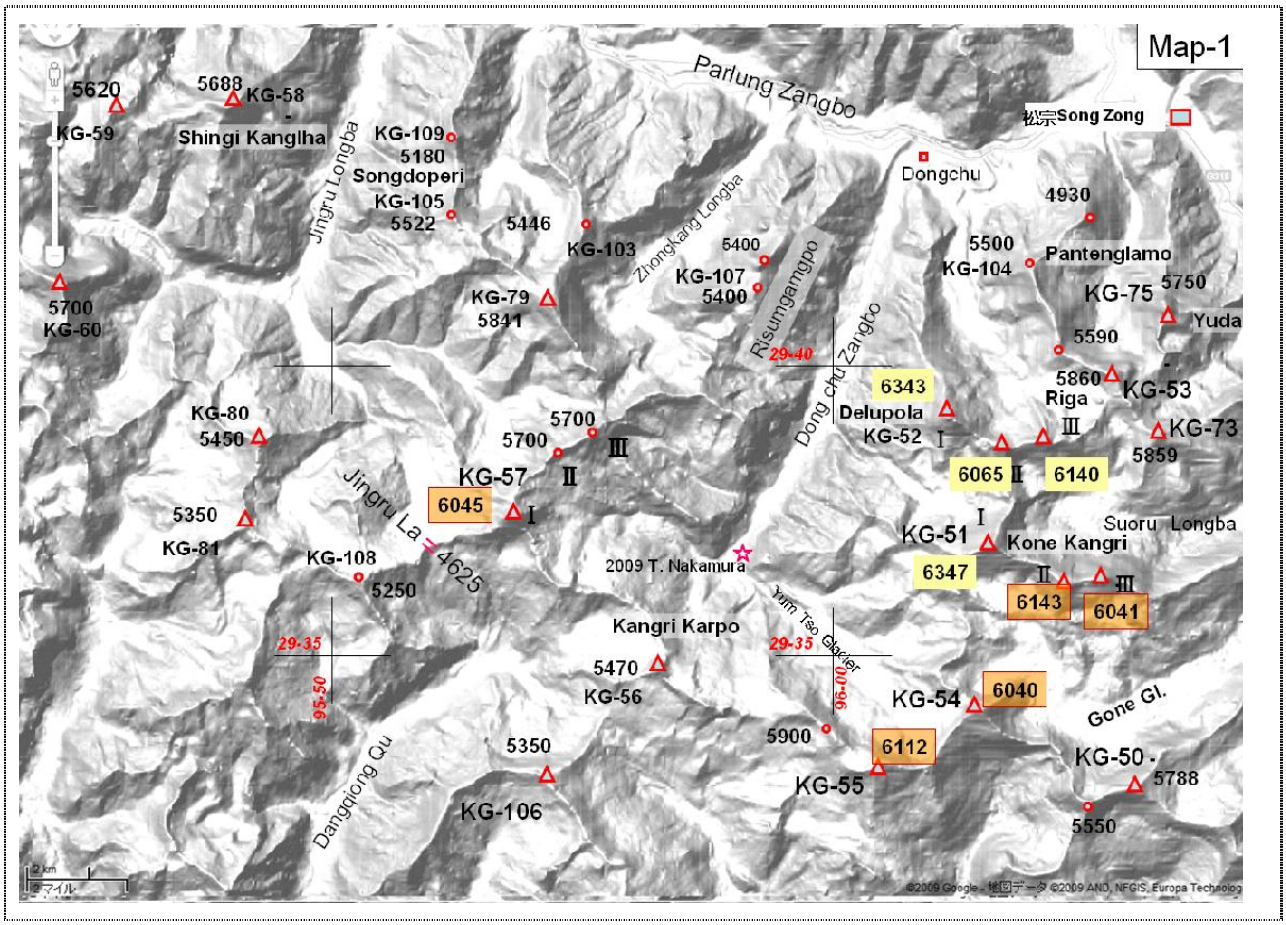
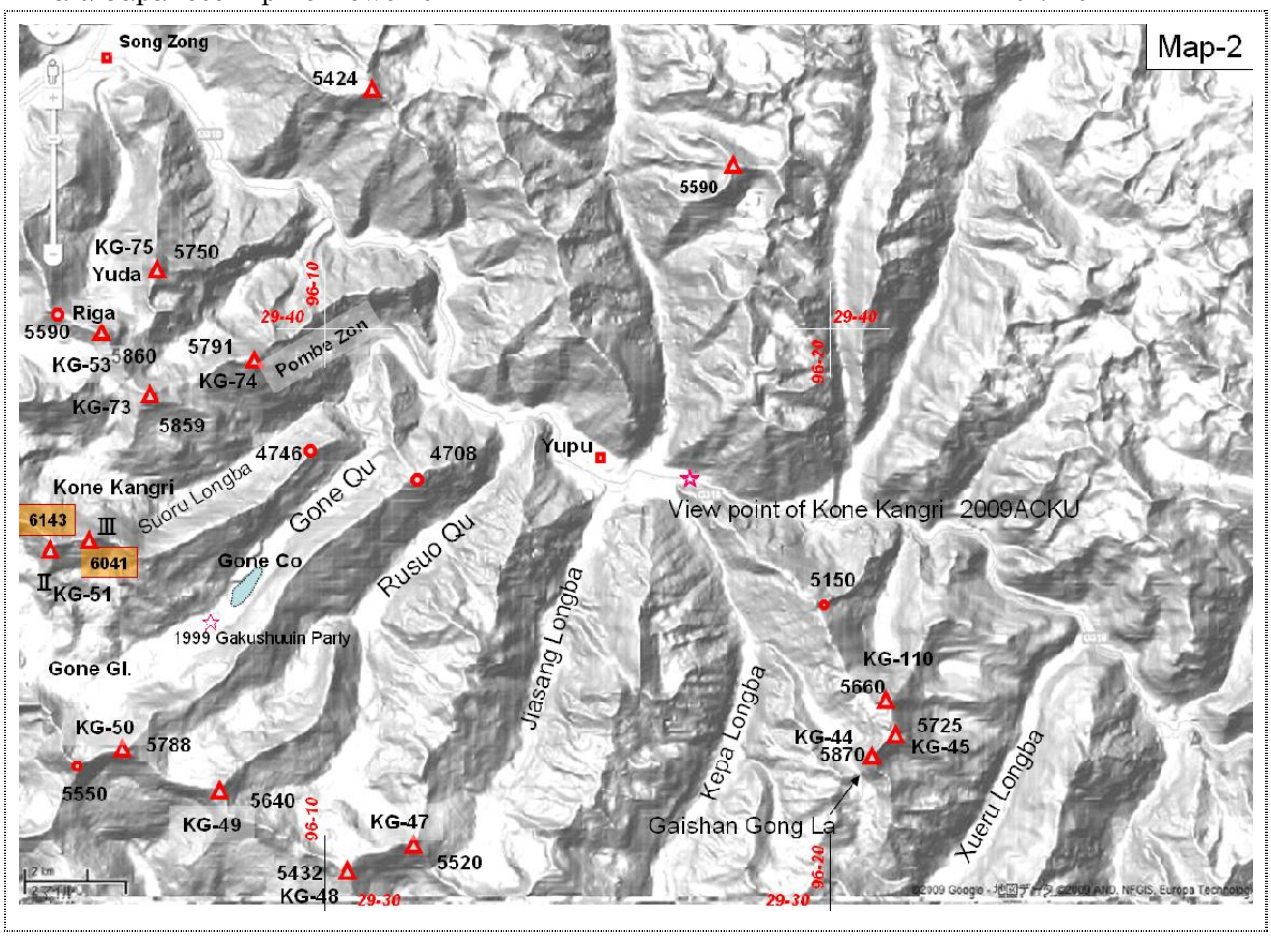


Fig.4 Kone Kangri Ⅰ and Delupola rock towers

◆ Hidden Six-thousanders in this range

Kone Kangri Ⅱ(6143m), Ⅲ(6041m), KG-54(6040m), KG-55(6112m) and KG-57 Ⅰ(6045m) are still unknown in this range. KG-53 (Riga 5860m), KG-73 (5859m), KG-74(Pombazon 5791m)KG-75 (Yuda 5750m) are not six-thousanders, but have attractive appearances. Riga, Pombazon and Yuda are sacred mountains of Tibet Buddhism.

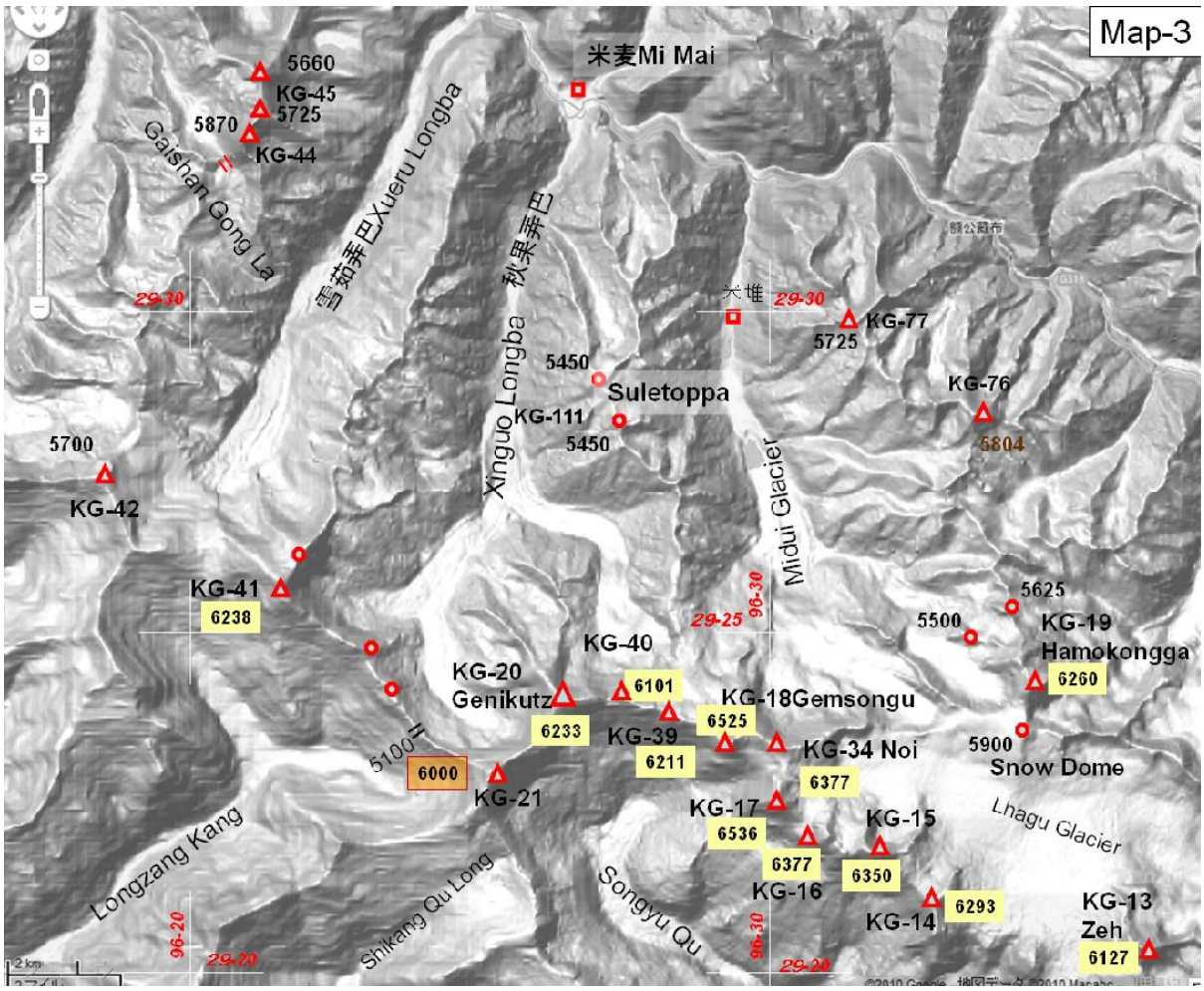




KG-44(5870m) can be seen from Yupu town. The steep slope of the south-west flank comes down to Gaishan Gong La where an old trail was passing through. Between KG-50(6040m) and KG-41(6238m), the main ridge of Kangri Garpo lowers its elevation and no six-thousanders could be found.

(2) Genikutz - Gemsongu Range (Map-3)

The main ridge of Kangri Garpo meets the Lhagu Glacier at KG-34(Noi 6377m) and KG-17 (6536m). Xueru Longba, Xinguo Longba and Midui Longba are flowing north from the divide of Kangri Garpo. There are 8 six-thousanders, KG-18(Gemsongu 6233m), KG-19(Hamokongga, 6260m), KG-20(Genikutz 6233m), KG-21(6000m), KG-34(Noi 6377m), KG-39(6211m), KG-40(6101m) and KG-41(6238m).



◆ KG41 (6238m) recognition

Tom Nakamura provided me a picture of a peak (Fig. 5) taken at the confluence in the deep valley near the snout of the west Xinguo Longba Glacier in the autumn 2009 where the tributaries of the west and the east Xinguo Longba Glacier merge.

Fig. 5 KG-41(6238m) from Xinguo Longba

Fig. 6 KG-41(6238m) from Snow Dome

One more important picture was provided by Haruhisa Kato, a member of the Silver Turtle trekking party in 2006, who took it on the top of Snow Dome (5900m) in the Lhagu Glacier (Fig. 6). These pictures have a figure-point that is clearly recognized. I had identified the peak as KG-41 (6238m).

◆ Where is Genikutz?

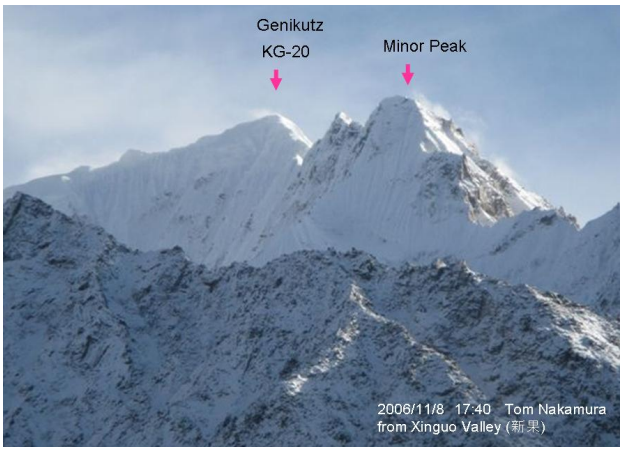


Fig. 7 KG-20 (Genikutz? 6233m)

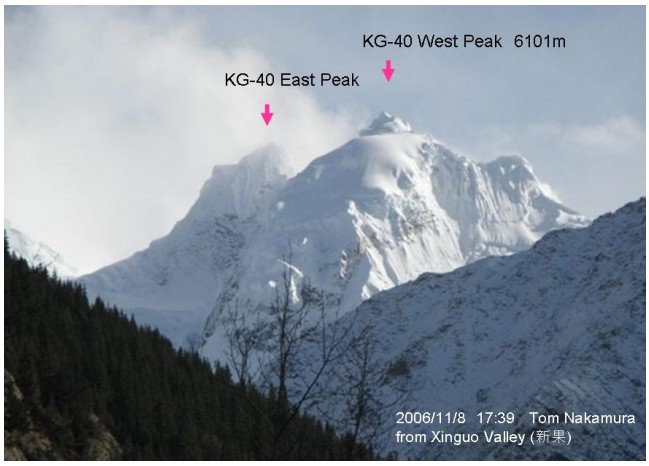


Fig. 8 Twin peaks of KG-40(6101m)

Fig. 9 Mysterious KG-21

Identification of the peak named Genikutz is still open to debate. As an assumption, I put the name Genikutz on KG-20 (6233m) after having gotten opinions from Hideki Watanabe and Takeru Nakayama. Watanabe put the name on the peaks of KG-39, 40, 20 and 21 as a group name (Fig. 7, 8 and 9). Nakayama put the name on the East peak of KG-40 because of his hearing from a local person of Midui village (Fig. 11). The twin peaks of KG-39 and the east peak of KG-40 can be seen from Midui valley. The west peak of KG-40 is not visible from Midui valley. KG-39 and KG-40 are both twin peaks.

Hideki Watanabe tried to take a picture of KG-21 (6000m) at the confluence of the East and West Xinguo Longba Glacier. The ridge to the top of KG-21 is appeared in his picture, but unfortunately the summit is covered with cloud. KG-21 is a missing

peak to date (Fig. 9).

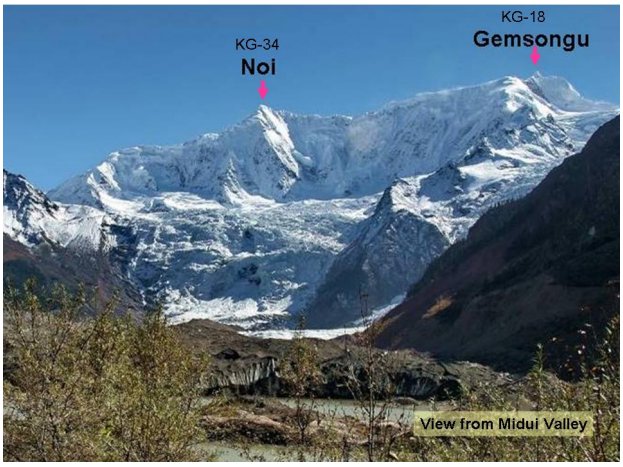


Fig. 10

KG-18(Gemsongu 6525m) & KG-34(Noi 6377m)

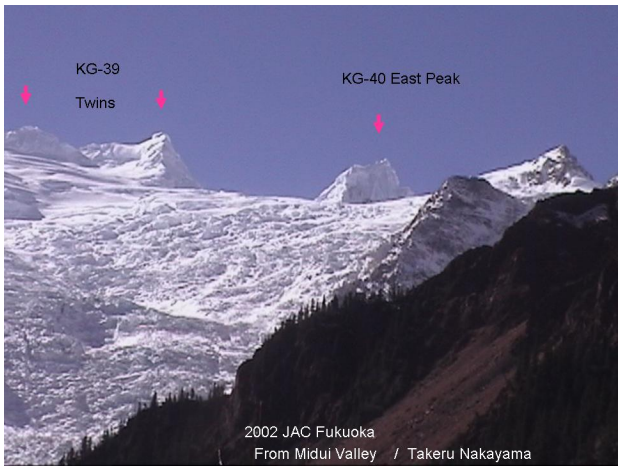


Fig. 11

KG-39(6211m) and East Peak of KG-40(6101m)

◆ Gemsongu and Noi

Gemsongu (KG-18 6525m) looks standing on the far end ridge in the Lhagu Glacier viewing from Lhagu village overlooking the wide and long Lhagu Glacier, but it belongs to the range of Genikutz - Gemsongu. People in Midui village call the peak KG-34 Noi. Noi looks two heads from Lhagu village, but it is obvious that Noi looks single head from Midui village.

KG-18 (Gemsongu) may or may not be the 4th highest peak in Kangri Garpo competing with KG-17 and KG-37.

◆ Hamokongga / Dojizandoi (KG-19 6260m)

It is not funny that a mountain has two different names. KG-19 (6260m) is such a case. We can enjoy the spectacular scenery of the Lhagu Glacier and surrounding six-thousanders at the square of Lhagu village (Fig. 12). Hamokongga stands on the right end of the scenery appealing pyramidal rock tower. From Midui village, on the opposite side, Hamokongga looks similar as of Lhagu side appearance. Hamokongga is visible from the river side hill along the Road G318, 100m higher altitude of the right bank of Parlung Zangbo, near the end of Rawu Lake where Hideki Watanabe tried to take a picture of it.

The Silver Turtle party approached KG-19 from the Lhagu Glacier in 2006, and stepped on the top of Snow Dome (5900m) that is a minor peak of Hamokongga.

(3) Lhagu Glacier Range (Map-4)

16 Six-thousanders stand on the divide of the Lhagu Glacier and one peak (KG-19, Hamokongga) stands on the off set ridge of the Lhagu Glacier. The Lhagu Glacier (approximate 30km length) and the Ata Glacier (approximate 27km length) are the largest ones in the South-east Tibet. The higher Six-thousanders are mostly located in these two glacier areas.

The best location to watch the peaks on the main ridge of Kangri Garpo is on the road to Dema La in the southern hill of Shugden Gompa. Spectacular scene of six-thousanders is unforgettable. Snow covered characteristic appearances of peaks from KG-1(Ruoni) to KG-18(Gemsongu) chaining in the cobalt blue sky are overwhelmingly shinning. Many peaks surrounding the Lhagu Glacier are visible from the village of Lhagu, too.

The record of an exploration in 2006 in the Lhagu Glacier organized by Silver Turtle party is published in the Japanese Alpine News Vol.8; Page 66-72"Ski Expedition to Lhagu Glacier by Kaneshige Ikeda". Comparing to my map-4, 5 and 6, there are many unmatched points such as configuration of ridges, peak names and elevation on the map of page 68 in their article. These conflicts will not be solved because we cannot get formal or authorized peak identification unless Chinese authority allows us to get topography that is kept strictly confidential, on the presumption that those maps are reasonably reliable.

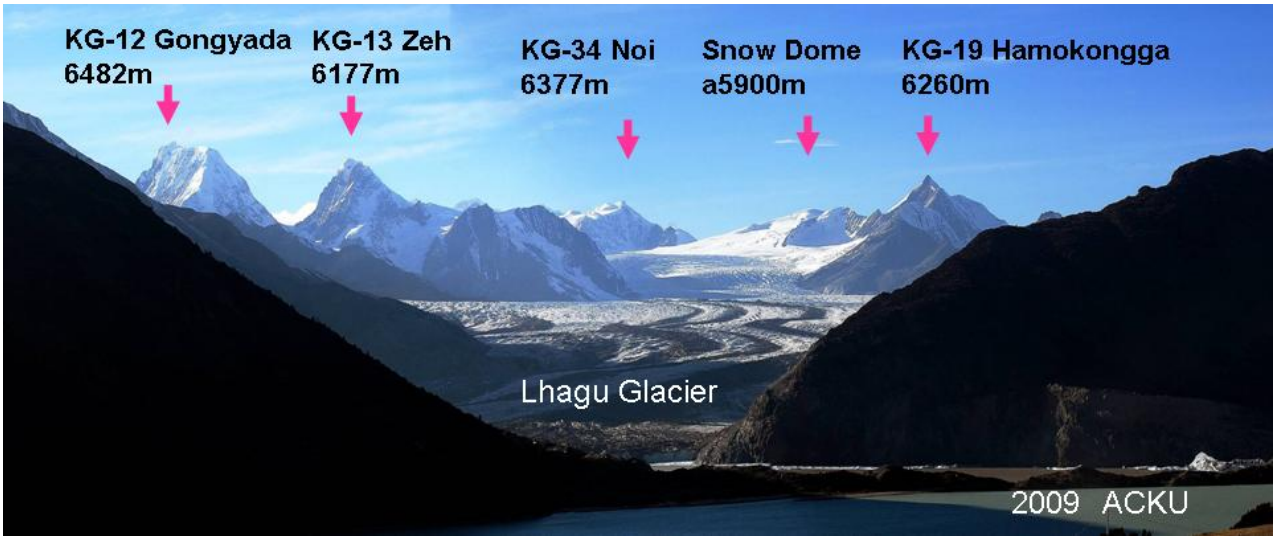


Fig.12 The most popular scenery of Kangri Garpo, view from Lhagu village

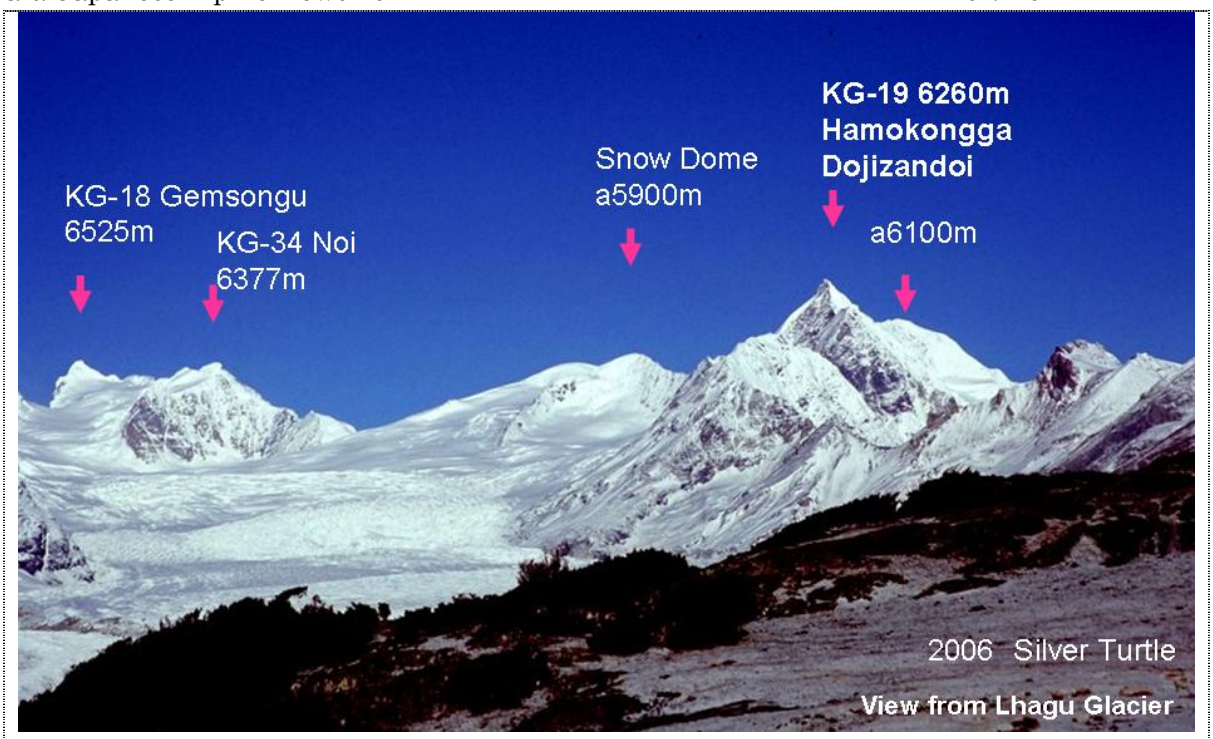


Fig.13 Snow dome in the Lhagu Glacier is a fine lookout point of the range

In 2006, Haruhisa Kato reached the top of Snow Dome (5900m) close to Hamokongga (KG-19) and took many pictures of the peaks surrounding the Lhagu Glacier. There are beautiful rock towers covered with snow and ice.

Fig.14 The head of a large Lhagu Glacier cirque on the divide of Kangri Garpo

◆ The highest peak in the Lhagu Glacier

Which is the highest peak in the Lhagu Glacier? The answer is probably KG-17.The old Soviet Union map has an altitude of 6606m on KG-17. The sketch map charted by Yukio Matsumoto chose this elevation. I have put 6536m on my sketch map that I extracted from ASTER GDEM. Comparing with several pictures taken from different points such as the road to Dema La, the left bank of the Lhagu Glacier and Snow Dome near KG-19, I could estimate KG-17 as close as 6600m. One more question is, which is higher KG-17 or KG-18(Gemsongu)? According to ASTER data, the difference between these two peaks is only 11 meters. This difference is within the tolerance of ASTER measurement. (Fig. 14)

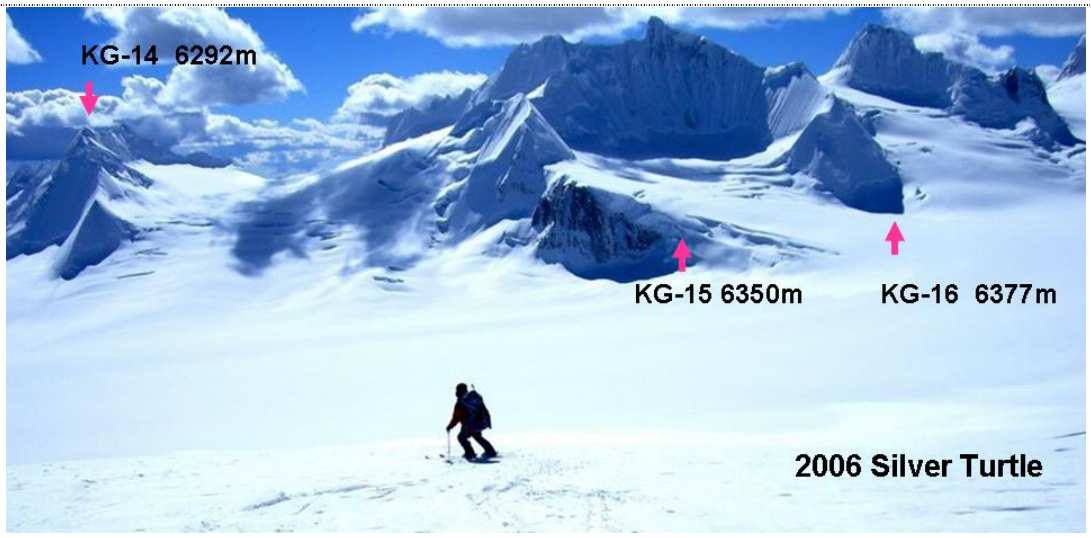
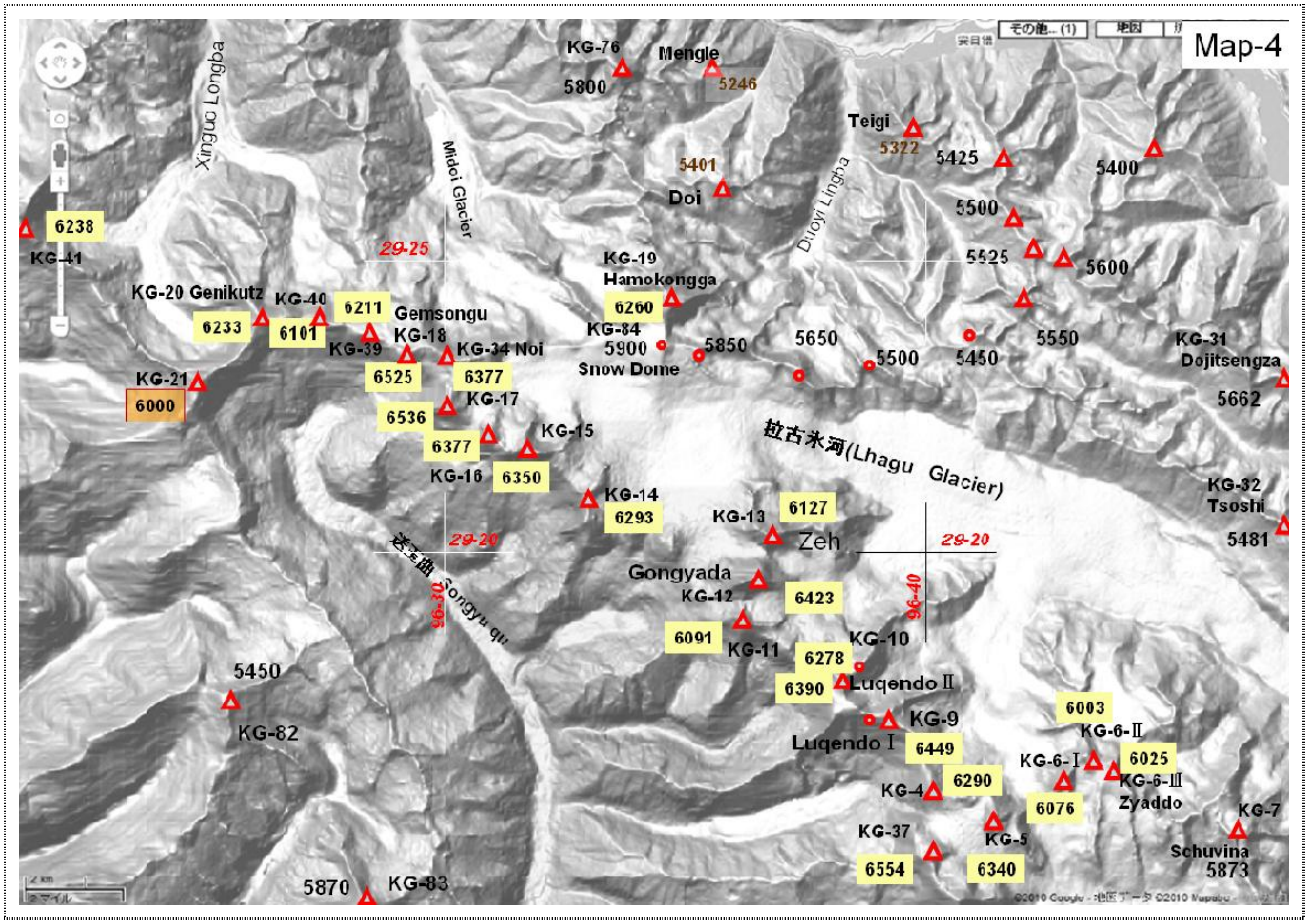


Fig.15 The snow covered upper Lhagu glacier provide a chance to ski partly.



◆ Gongyada /Hiqen group

Silver Turtle party named KG-11(6091m), 12(6422m) and 13(6127m) as Hiqen Ⅲ, Ⅰ and Ⅱ respectively. Yukio Matsumoto named Gongyada on KG-12 and Zeh on KG-13 (Fig. 16). Basically, Matsumoto selected names relying upon his hearing from Tibet Monks. Silver Turtle mainly picked up names from hearing the local people. On the west side of Gongyada group, the large ice field of the Lhagu Glacier covers the main ride of Kangri Garpo and forms a plateau.

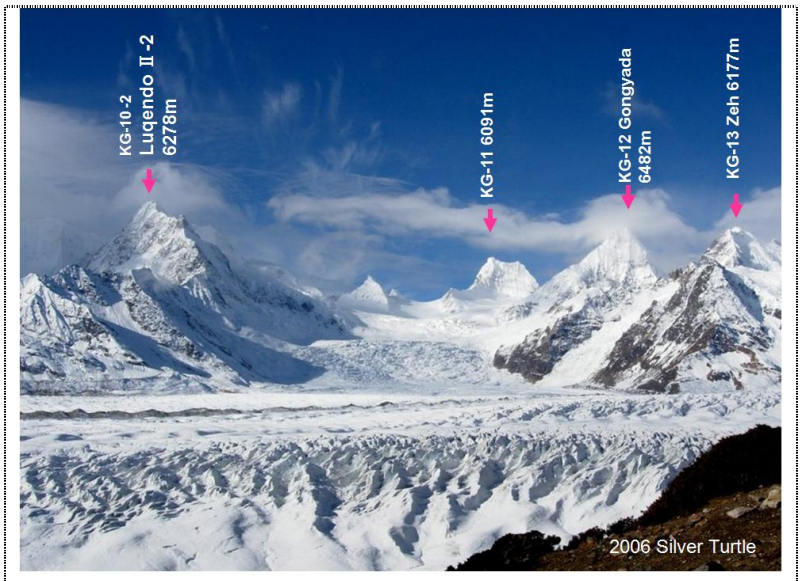


Fig.16 KG-15 Gongyada and Luqendo

The main ridge looks cut off by this ice field. Two separated hanging glaciers flow down to the south-westward from the ice field.

A small pyramidal snow-covered peak is appeared between Luqendo Ⅱ-1(KG-10

-1 6390m) and Hiqen Ⅲ(KG-11 6091m). This peak may or may not be a six-thousander.

◆ Luqendo Group

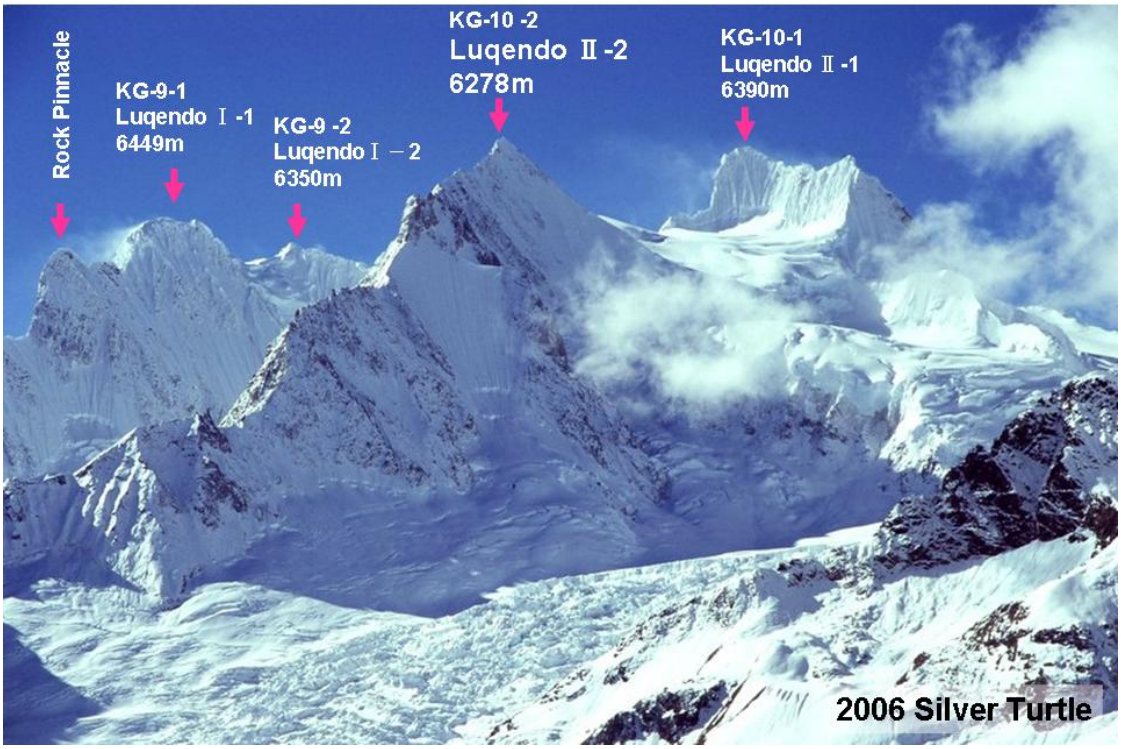


Fig.17 Luqendo group has 5 peaks. KG-9 Ⅰ－Ⅲis invisible

The Luqendo group has complex arrangement of 5 peaks and ridges. The main peak Luqendo Ⅰ (6449m) has a needle rock pinnacle on the north-west ridge. It is a typical feature of this mountain. When I had started to pay attention on this group, I had recognized three peaks. After getting some pictures, I found a minor peak of KG-9-3. In the picture Fig.17, I finally found KG-9-2 which was hidden behind the main peak of KG-9-1.The peaks and ridges of this group have been shaved by heavy snow fall and formed thin saw-toothed ridges. The Silver Turtle party in 2006 revealed the detail feature.

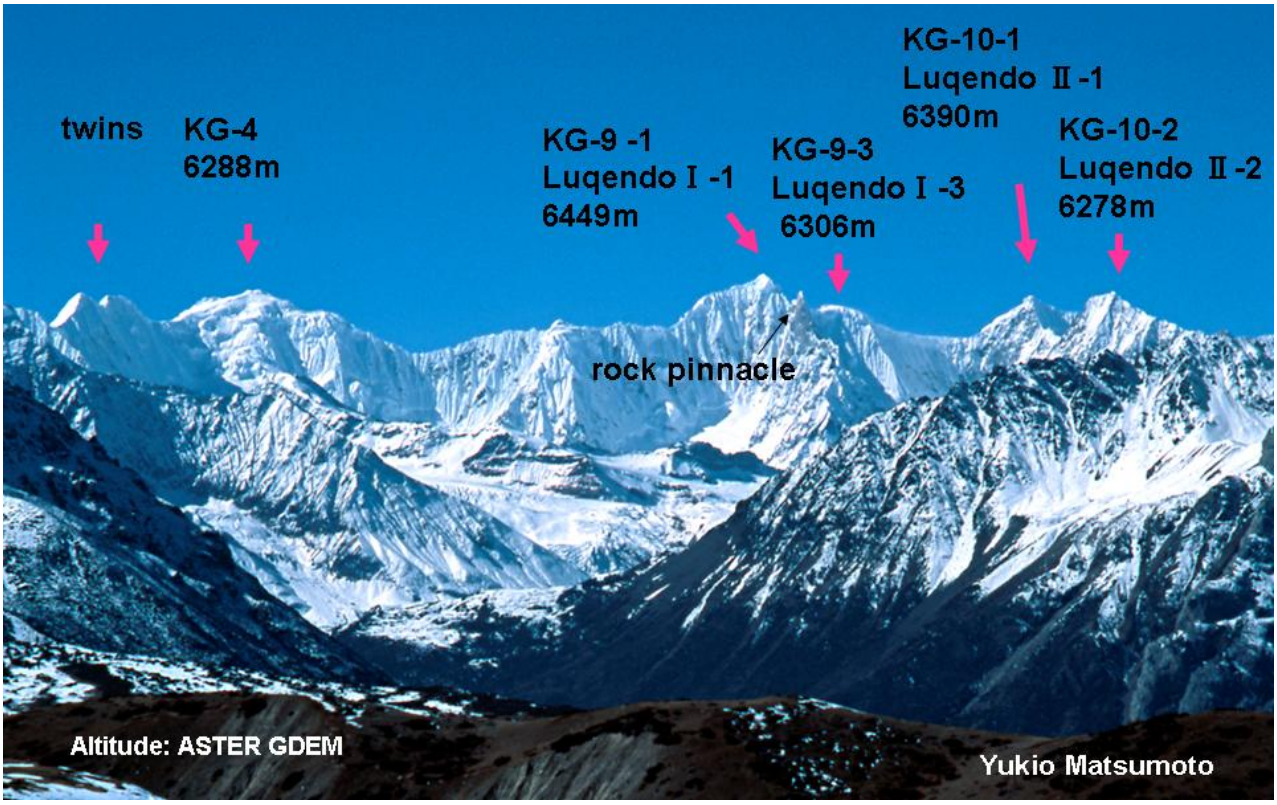


Fig.18
Kangri Garpo means "white mountains". Heavy snow grows large glaciers and sharply shaped peaks.

◆ Ridge configuration between the Lhagu Glacier and the Ata Glacier

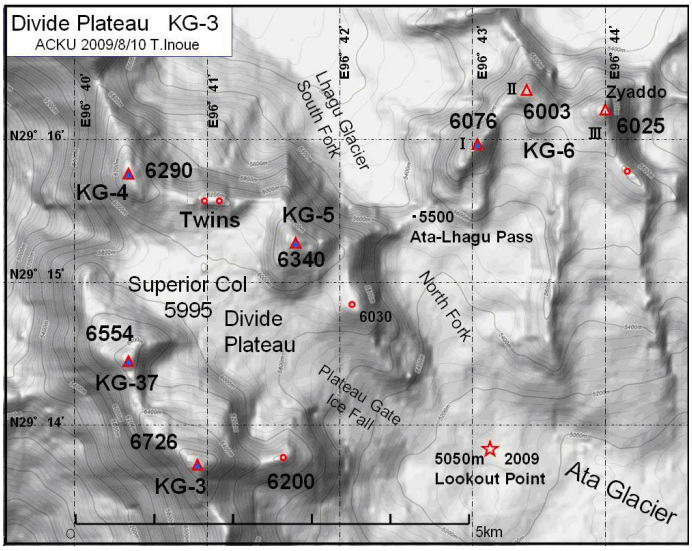
KG-4(6290m) is the node peak of the main ridge of Kangri Garpo and the branch ridge to KG-5, 6 and 7 that is the divide between the Lhagu Glacier and the Ata Glacier. The branch ridge will be referred to as the Zyaddo ridge in this article.

The Zyaddo ridge including in peaks from KG-4 to KG-7(Schuvina) was especially confusing because of complex topography. During our review process of peaks and glaciers surrounding the Ata Glacier for the purpose of selecting a peak to be climbed, I assumed that the analysis of the Zyaddo ridge configuration done by Yukio Matsumoto was incorrect. He charted in his book that the Zyaddo ridge was branched off from the top of KG-4 and directly joined to Zyaddo. My opinion was that the Zyaddo ridge starts from KG-4 and continues to Twins and KG-5(6340m). Then It lowers to Ata-Lhagu pass(5500m) and joined KG-6- Ⅰ.

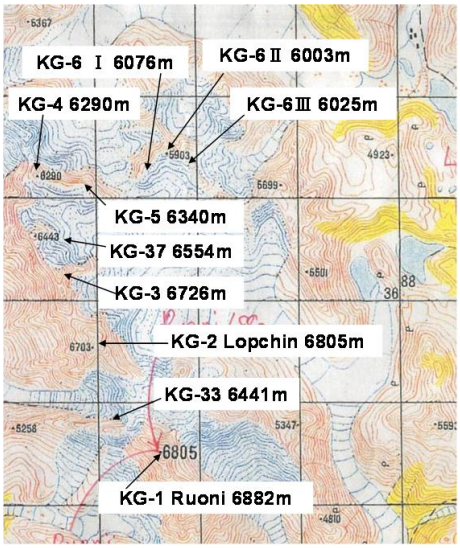
The argument about the Zyaddo ridge configuration around the watershed of the Ata Glacier was heated among members of the Hengduan Mountains Club, Japan chaired by Tom Nakamura. I think the confusion was induced by two sources, one was the picture taken by Yukio Matsumoto team from the road to Dema La (Fig, 20) and another was the Soviet Union Map (Map-9).

A picture of the north-east face of the Zyaddo ridge (Fig.20) gave us the first confusion because of overlapping peaks; KG-37, KG-4, KG-6- Ⅰ, KG-6- Ⅱ respectively. Secondly, the Soviet Union map has no KG-5 and has KG-6 as only one peak. In reality, however, KG-6 has three peaks. Identification of peaks and

ridges around the divide of the Ata Glacier and the Lhagu Glacier was one of the most interesting discussion in the research party. This controversy was raised at the annually meeting of Hengduan Mountains Club in 2007. Finally the ACKU Lopchin Expedition 2009 entered in to the Ata Glacier and clearly solved this issue. This episode suggested us the Kangri Garpo Mountains is still an unknown area on the globe. The conclusion was charted on Map-8. The Soviet Union map is shown in Map-9 in comparison to Map-8.



Map-8 Divide Plateau



Map-9 Divide Plateau (Soviet Map)

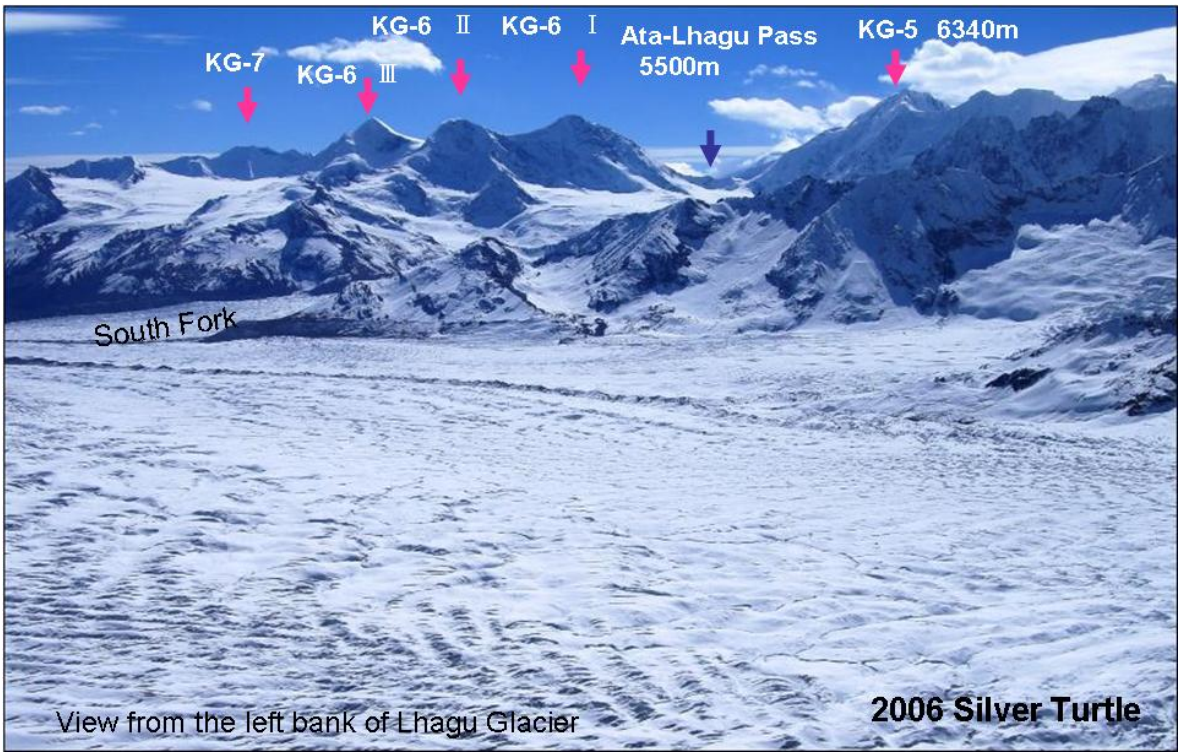


Fig.19
The Ata-Lhagu Pass (5500m) was a mysterious point before Kobe University party visited the upper Ata Glacier. A picture taken from the Lhagu Glacier provided by Mr. Haruhisa Kato confirmed its existence

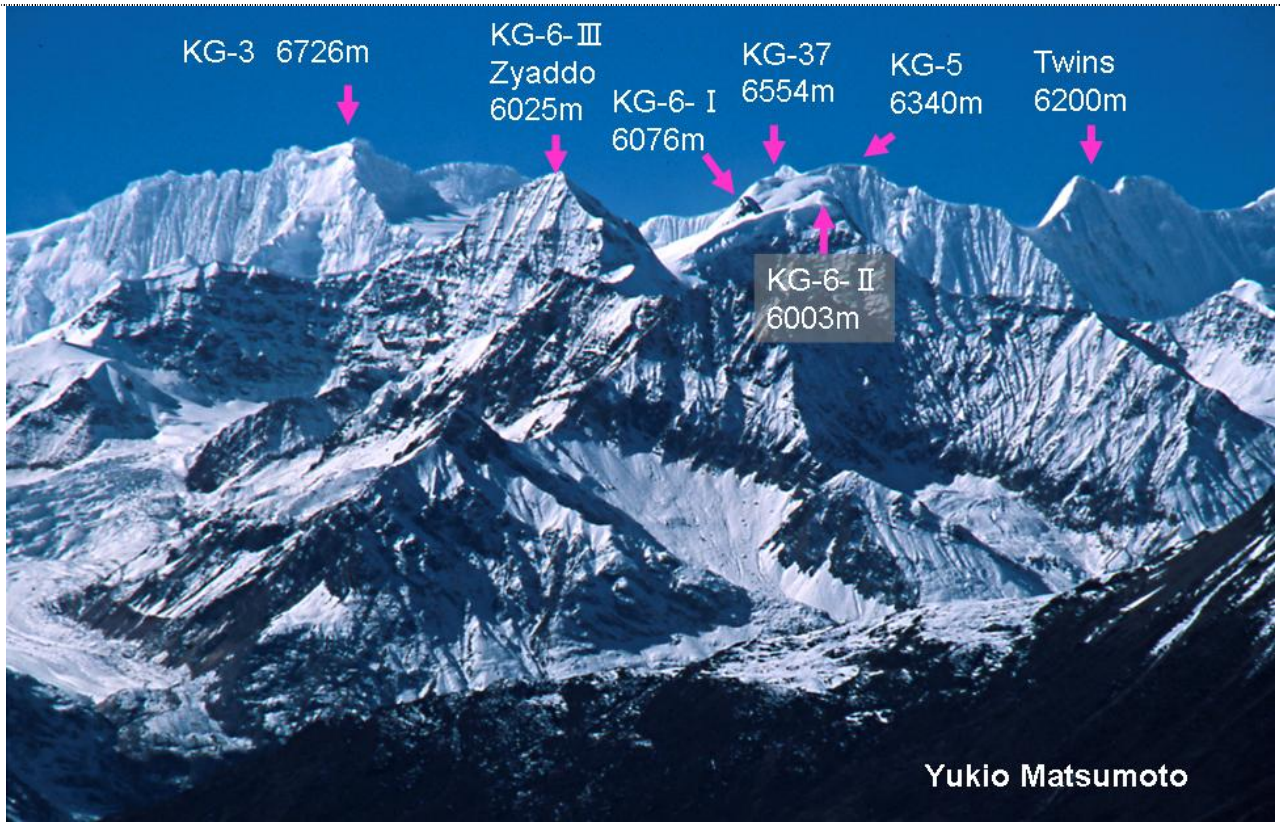


Fig.20 North-East face of the Kangri Garpo Ridge .Many peaks look overlapped.

◆ Zyaddo and KG-6

In the Yukio Matsumoto map, the position of Zyaddo was put on the 5903m altitude printed position of the old Soviet Union map. According to my analysis, KG-6 has 3 peaks, Ⅰ(6076m), Ⅱ(6003m) and Ⅲ(6025m). The position of KG-6 Ⅲ is matching to Zyaddo in the Matsumoto map. KG-6Ⅱ(6003m) locates the same position as of 5903m in the old Soviet Union map. Those 3 peaks are six-thousanders according to the data from ASTER GDEM. ACKU 2007 reconnaissance party confirmed KG-6 as three peaks.

The north-east flank of KG-6 is a steep rock wall and the Ata Glacier side is covered with gentle slopes of glacier fingers. Ata-Lhagu Glacier Pass (5500m) is located between KG-5 and KG-6- Ⅰ.

In 2000, Silver Turtle party had a plan to explore the Ata Glacier and the Lhagu Glacier via Ata-Lhagu Pass, but they could not execute it. No one has passed through the Ata-Lhagu Pass to date. Takeru Yamada and I stepped on the Ata Glacier toward the pass and reached 5050m just at the confluence of a tributary glacier to the pass. It seems to be able to trek from the Ata Glacier to the Lhagu Glacier.

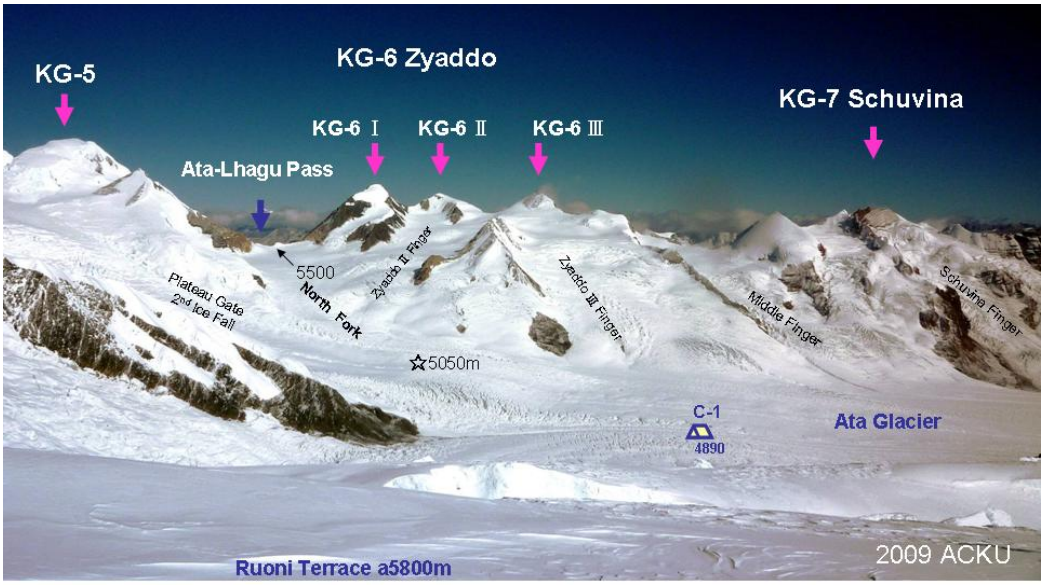
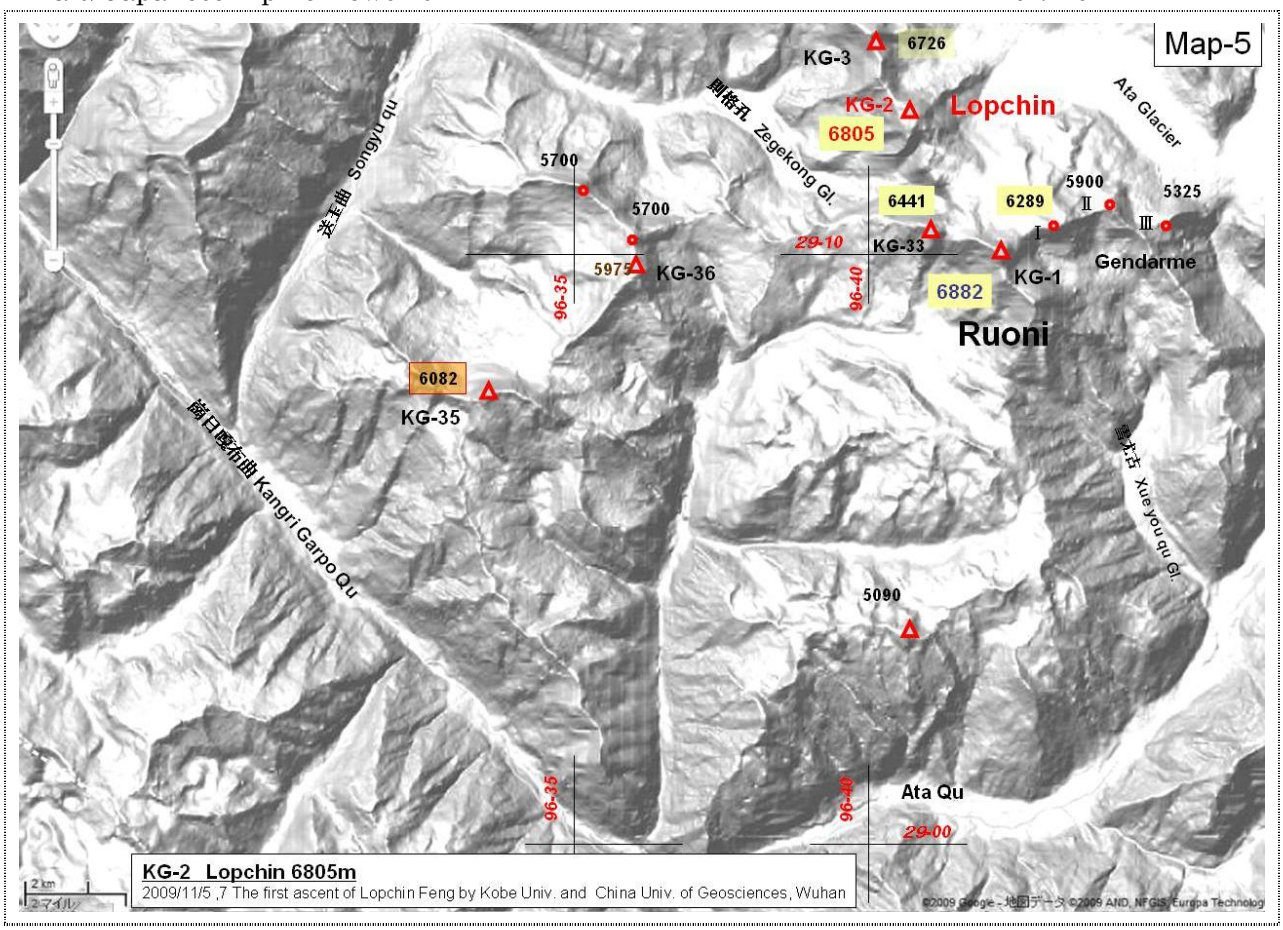


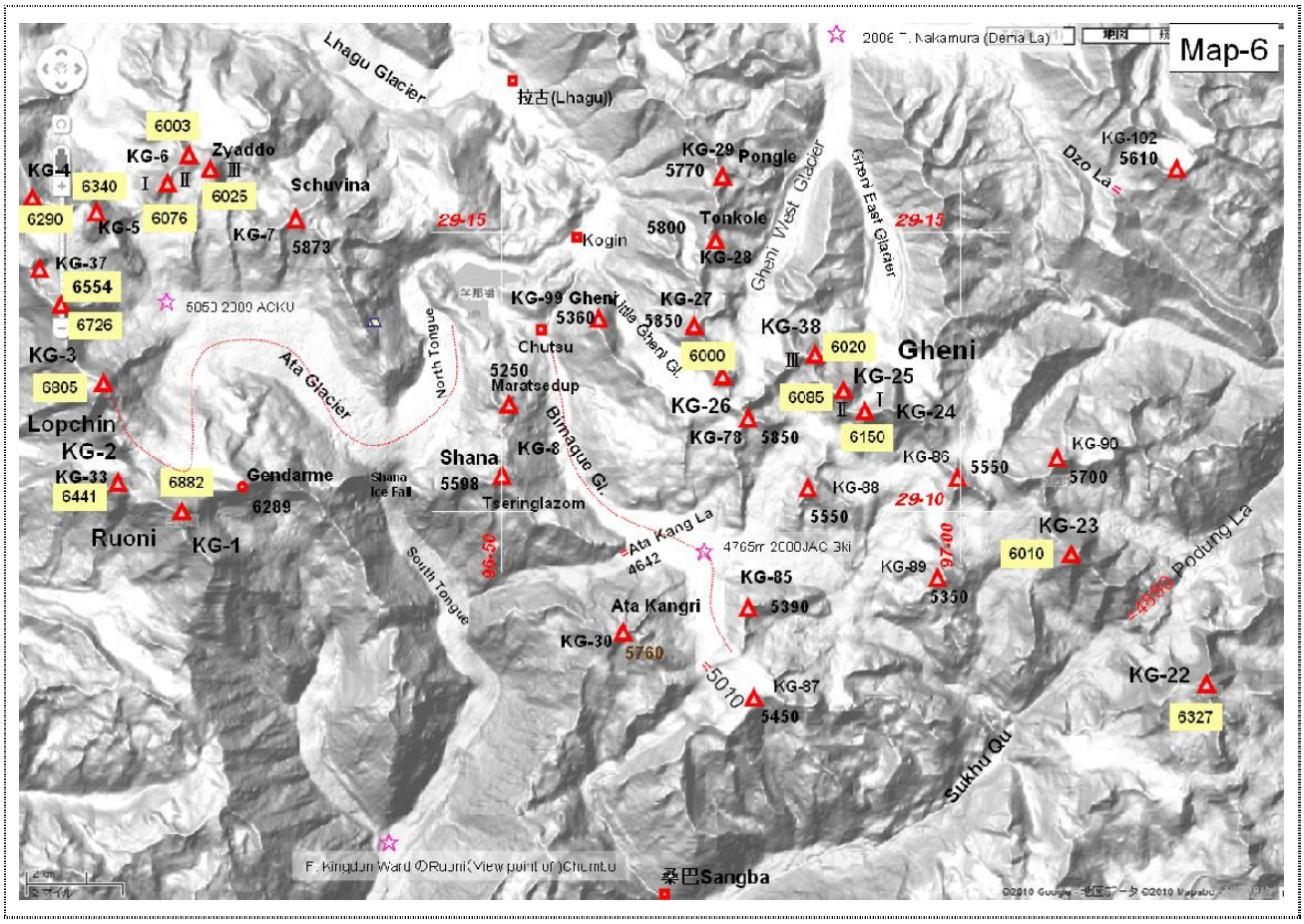
Fig.21
The North Fork of the Ata Glacier gently comes up to Ata-Lhagu Pass. View from Camp-3(5910m, 2009 ACKU Expedition)

(4) Ata Glacier Range (Map-5 and 6)

The words "un-known", hidden" and "un-explored" are most valuable keywords for mountaineers those who are orienting to be pioneers. ACKU has been keeping this pioneer spirit to choose peaks to be climbed. Kangri Garpo is the best world to achieve our goal in 21st century.

Since the reconnaissance party from ACKU in 2002 had no certain picture of Ruoni, they had struggled to find the possible route to the summit. In 2003, they tried to climb Ruoni from the Ata Glacier. They failed because of bad weather and dangerous condition of the ridge to the summit, but discovered many unknown peaks. In addition to these trial, the 2007 and 2009 expedition had newly discovered KG-2 (Lopchin Feng 6805m, the second highest peak of Kangri Garpo climbed in 2009), KG-3 (6726m), KG-37 (6554m), KG-33(6441m), KG-6 Ⅰ (6076m), KG-6 Ⅱ (6003m), KG-26(6000m) and KG-38 (6020m).


Map-5
KG-3
6726
KG-2
6805
Lopchin
Ata Glacier
Zegekong Gl.
Songyu qu
5700
5700
5975
KG-36
6441
KG-33
29-10
6289
5900
5325
Gendarme
KG-1
6882
Ruoni
96-35
96-40
6082
KG-35
Kangri Garpo Qu
Xueyou qu Gl.
5090
Ata Qu
29-00
KG-2 Lopchin 6805m
2009/11/5 ,7 The first ascent of Lopchin Feng by Kobe Univ. and China Univ. of Geosciences, Wuhan


Map-6
Lhagu Glacier
拉古(Lhagu)
6003
KG-6
Zyaddo
KG-4
6340
6290
KG-5
6076
6025
Schuvina
KG-7
5873
29-15
KG-37
6554
6726
KG-3
6305
Lopchin
KG-2
KG-33
6441
6882
Gendarme
6289
Ruoni
KG-1
Ata Glacier
North Tongue
South Tongue
Kogin
5800
KG-29
5770
Pongle
Tonkole
KG-28
Ghani West Glacier
Ghani East Glacier
29-15
KG-102
5610
Dzo La
KG-99 Gheni
5360
KG-27
5850
Chutsu
5250
Maratsedup
Little Ghani Gl.
6000
KG-38
6020
Gheni
KG-25
6085
KG-24
6150
KG-26
KG-78
5850
Bimaque Gl.
KG-8
Shana
5598
Tseringlazom
Shana Ice Fall
KG-86
5550
KG-90
5700
KG-88
5550
29-10
KG-23
6010
Ata Kang La
4642
4765m 2000JAC 3ki
KG-85
5390
KG-99
5350
97-00
Podung La
Ata Kangri
KG-30
5760
96-50
5010
KG-87
5450
KG-22
6327
Sukhu Qu
桑巴Sangba

◆ KG-35, a possible six-thousander

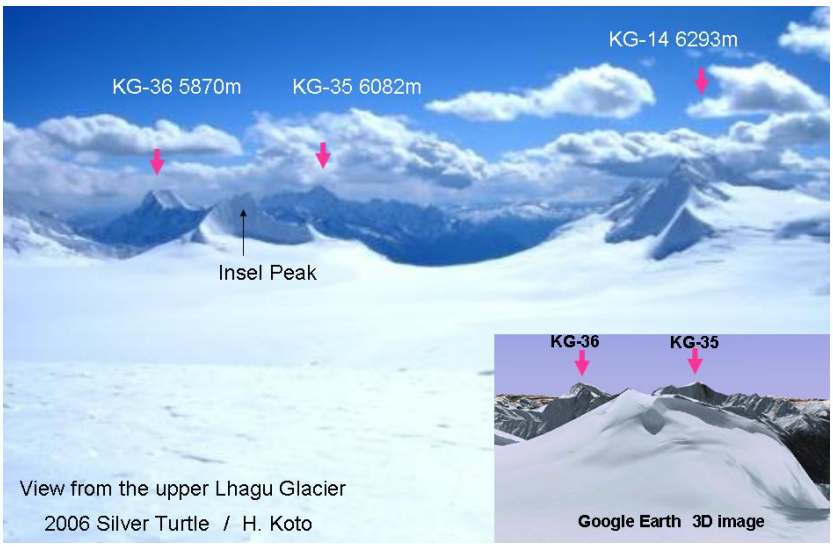


Fig 22 Unknown south-west slope of Kangri Garpo

KG-35 (6082m) stands on the end of the west ridge of KG-1(Ruoni Feng). A picture taken from the top of Snow Dome captured KG-35 and KG36, but it is too small and unclear to grasp the whole figure of those peaks.

The current maps have 6082m on KG-35 but I got 5991m altitude from ASTER. I assume KG-35 is one of six-thousander, but the elevation may be around 6000m.

In 1935, Ronald Kaulback had travelled through Kangri Garpo Qu and passed over Kangri Garpo La. A steep slope of 3900m elevation gap within 6 km horizontal distance goes up to the top of KG-35(6082m) from the bottom of Kangri Garpo Qu gorge (2200m) near Buzong Cun. I suspect he could not see any six-thousanders on the main ridge of Kangri Garpo. The south-west face of Kangri Garpo is mysterious for us and expected to be unveiled.

◆ Three Ata Sisters; KG-1(Ruoni) , KG-2(Lopchin) and KG-3

Fig.23 Ata Glacier great cirque; We refer to Ruoni, Lopchin and KG-3 as Three Ata Sisters.

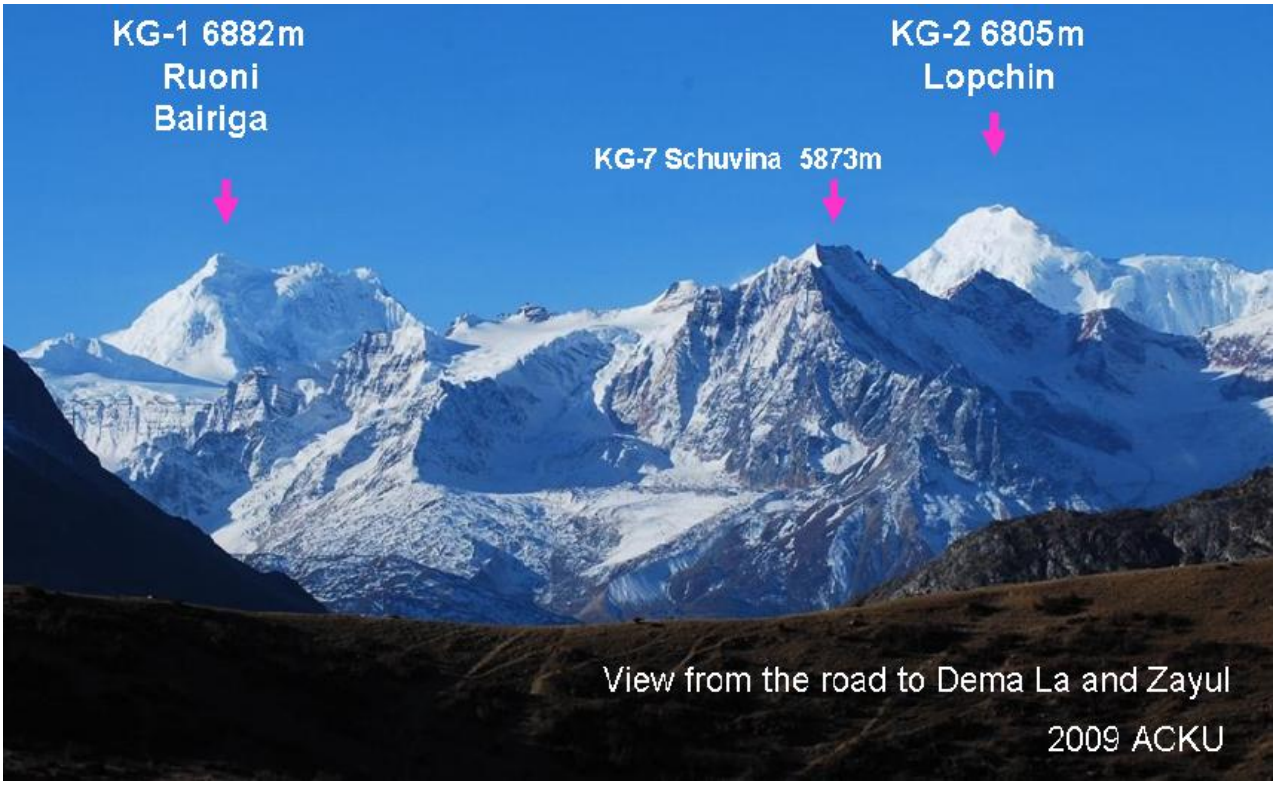


Fig 24 The highest peak Ruoni in Kangri Garpo and KG-2(Lopchin)

Even though the expedition members of ACKU in 2003 saw KG-2(Lopchin) standing next to KG-1(Ruoni), no one paid attention to KG-2. We could identify KG-2 in the picture taken from the road to Dema La. She looks same height as Ruoni. In 2007, Takeru Yamada who was the leader of 3rd visit by ACKU confirmed KG-2 as the best target for the first ascent of the whole Kangri Garpo.

The old Soviet Union map printed 6805m on KG-1(Ruoni), 6703m on KG-2(Lopchin) and 6443m on KG-37 but no altitude number on KG-3. The latest Chinese map has 6882m on KG-1(Bairiga) and no information about KG-2, KG-3 and KG-37.

To our astonishment, Koichiro Kondo watched his GPS indicated 6805m on the summit of Lopchin Feng when he reached the top. It was about 100 meters higher than that of our expectation. This fact led us to review existing maps and reports again. We can not get any Chinese topography map which may have detail information about peaks today. We have accessed Google Earth, NASA World Wind and ASTER GDEM. Since I do not know which geoid model the old Soviet map had, the accuracy may not be good enough. About 100 meter difference is too large to use it for climbing that I doubt current altitudes of peaks in Kangri Garpo. I made a comparison of the altitudes of peaks surrounding the Ata Glacier (List-2). Approximately 80 to 110m differences are shown on the list. I hope we will be able to access the official Chinese topography based on the latest survey technology.

List-2 The altitudes of peaks in comparison with different sources

NO	KG-#	Peak Name	This report	On site	Soviet	Chinese	ASTER
1	KG-1	Ruoni	6882	6859	6805	6882	6841
2	KG-2	Lopchin	6805*	6814	6703		6791
3	KG-3		6726	6740	-		6698
4	KG-5		6340	6373	-		5340
5	KG-6 Ⅲ	Zyaddo	6025	6018	5903**		5999
6	KG-7	Schuvina	5873	5890	5699		5873
7	KG-8	Shana	5614	5614	5593		5571

Note: * GPS data on the summit ** data position at KG-6 Ⅱ

As a conclusion based on this comparison, the order of altitude between KG-1, KG-2 and KG-3 is KG-1 > KG-2 > KG-3.

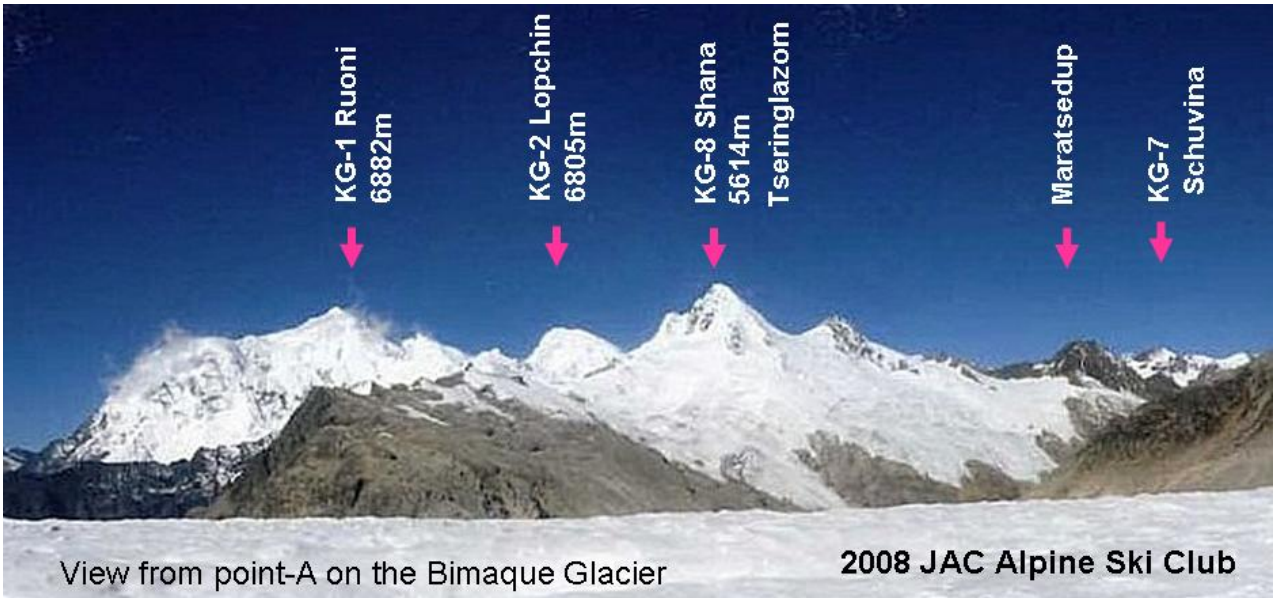


Fig 25 View from Bimaque Glacier near Ata Kang La provides another appearance of Ruoni and Lopchin

Osamu Matsuo took a picture of KG-1 and KG-2 from Bimaque Glacier; 4765m point "A" in the sketch map of this article (Map-6). It captured KG-1 and KG-2 beyond the ridge of KG-8 (Tseringlazom of Shana group).

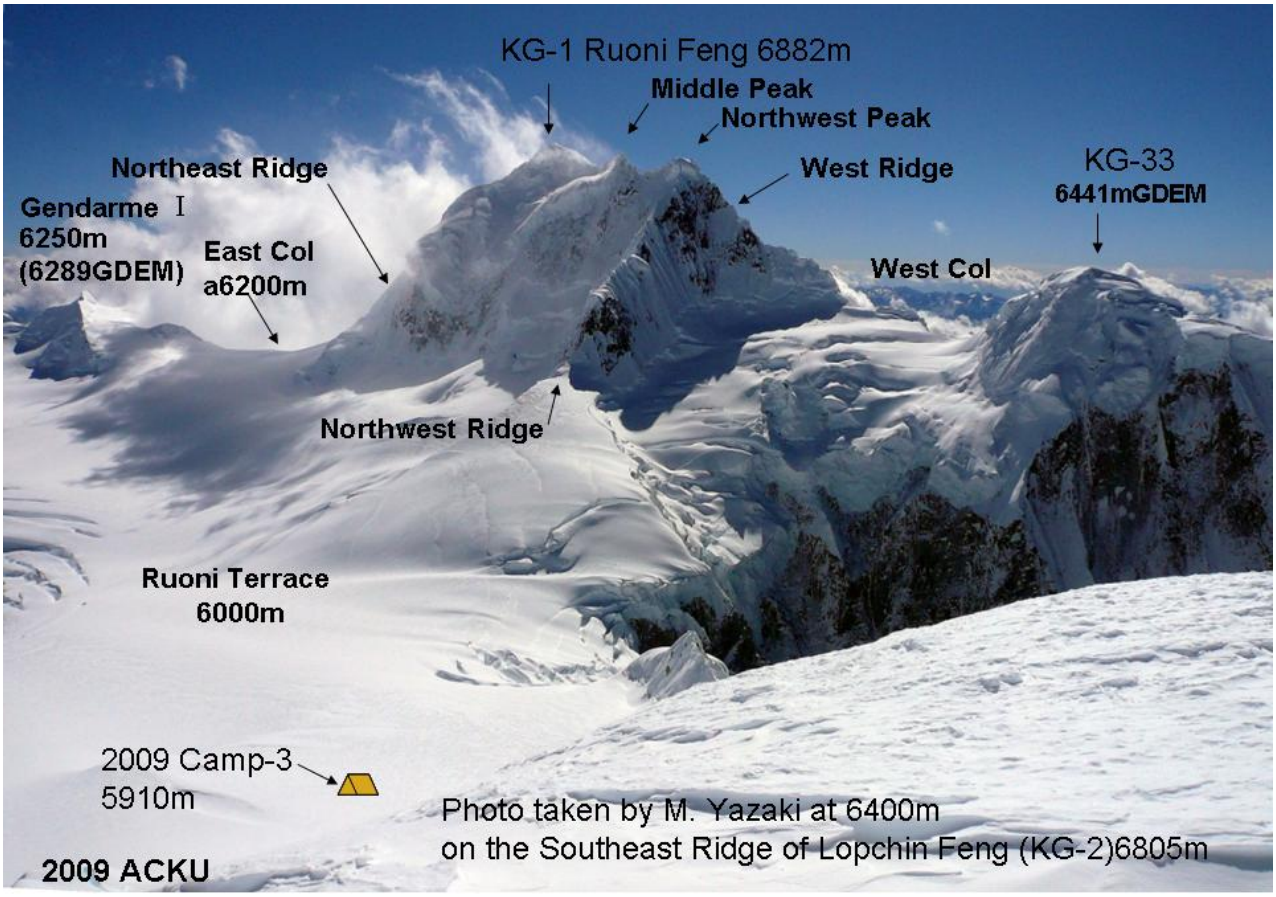


Fig 26 Ruoni the highest peak in Kangri Garpo

KG-1 has 3 names (Choembo, Ruoni, Bairiga) and different heights, 6805m (old Soviet Union map), 6882m (Chinese map), 6610m ("Glacier of Tibet" ,Chinese Academy of Science) and others. The local people call her "Ruoni", but we suspect the year 2003 ACKU expedition members called her "Ruoni", and influenced the locals. A recent Chinese map has the name "Bairiga".

Can anyone climb Ruoni? ACKU 2003 expedition had reached 5900m on Ruoni Terrace just in front of the steep wall. They could not find a safe and passable route to the summit of Ruoni despite twice reconnaissance and once attempt over the past several years. There are three considerable routes to the top. They were too overwhelmed by hanging seracs and steep saw-tooth rocks and snow ridges.

We heard news from a student of Tibet Mountaineering School that a Swiss party accessed 3 different routs to Ruoni in 2005, but we did not get any information about this attempt from the Chinese Tibet Mountaineering Association. They said they gave a permit only to ACKU.

KG-33(6441m) was a hidden six-thousander before 2009 ACKU expedition had reached the Ruoni Terrace. They discovered that KG-33 stands on the west ridge of KG-1(Ruoni).

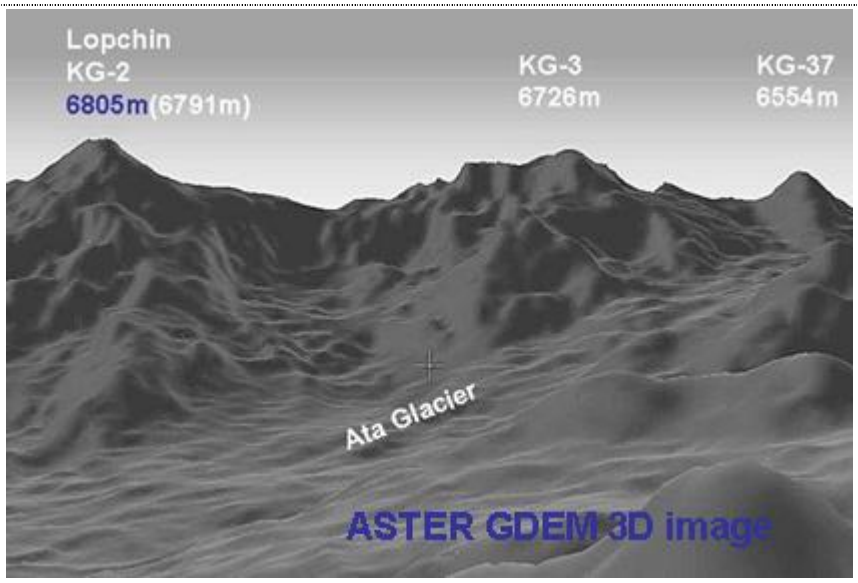


Fig 27 ASTER GDEM gives us good evidence of peak identification.

KG-3 was a missing peak in the Ata Glacier before ACKU identified it in 2003. Since KG-3, KG-37 and KG-5 are obstructed and overlapped by the Zyaddo ridge when viewing them from the road to Dema La because it was difficult to distinguish them individually. Only P-6443m (KG-37) is printed on the Soviet Union map. ASTER GDEM data and its three-dimensional image helped me to identify and distinguish those peaks.

Fig 28 KG-2(Lopchin, 6805m)

Since the peak KG-2(6805m) had no name, we expected to get the local name. We asked Lhagu village people and got several answers. One person said, “White bird’s

peak" but it was not confirmed. After consultation with the village leader of nearby Lhagu, we agreed to name KG-2 "Lopchin Feng" (Chinese "Lou bu qin") which means male hawk, brave, intelligence and university.

◆ KG-4, KG-5 and KG-37

The main ridge of Kangri Garpo runs from KG-4(6290m) to KG-5 (6340m) via Twins (This is not an official naming, but just a nickname for identification.). The upper plateau cut the main ridge off near KG-5. The main ridge starts again from KG-37(6554mm) and continues to KG-3, KG-2 and KG-1. KG-4 stands on the edge of the upper plateau and is visible from Ruoni Terrace.

KG-5 is visible from the point on the road to Dema La, but many observers could not distinguish it because KG-5, KG-37 (P6443m on the old Soviet map), KG-6- I and II have overlapped on a line. A small top part of KG-37 is visible over the summit ridge of KG-5 (Refer to Fig.20 again).

Fig 29 Divide plateau of the Ata Glacier

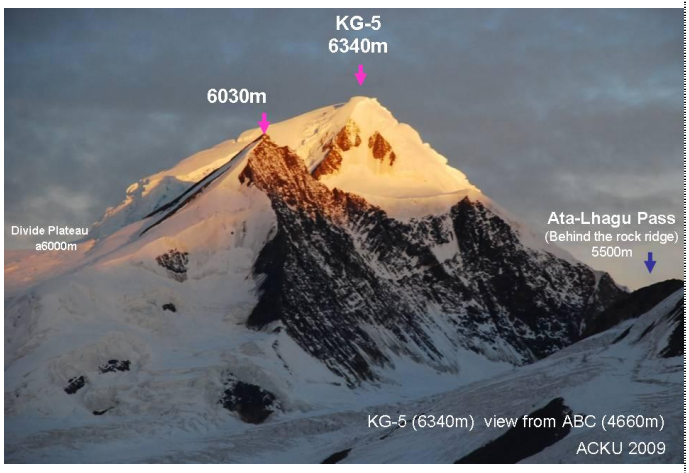


Fig 30

KG-5 was discovered as one of six-thousanders.

Fig 31 KG-37 was identified in the old Soviet Union map as 6443m, but is estimated as 6554m.

(5) Gheni Feng Range (Map-6 and 7)

◆ KG-22, the highest peak in the south-east end range, and hidden KG-23

The old Soviet Union map has 6327m peak (KG-22). Many researchers of Kangri Garpo tried to unveil this peak. In 1911, F. M. Bailey travelled east side of Kangri Garpo and passed Dzo La. According to my analysis by using a picture taken by Tom Nakamura who aimed southern view from the road to Dema La, KG-22 is captured on the left side of it (Fig.32). It means F. M. Bailey might see KG-22 if the weather permitted. Dema La area is a good place to observe Gheni range.

Wide open view of KG-24(Gheni Ⅰ6150m), KG-25(Gheni Ⅱ,6050m) and KG-26 (6000m) can be enjoyed from Dema La area. Only one opportunity made by 2009 Expedition allowed us to get the south-west slope view of the range (Fig.36).

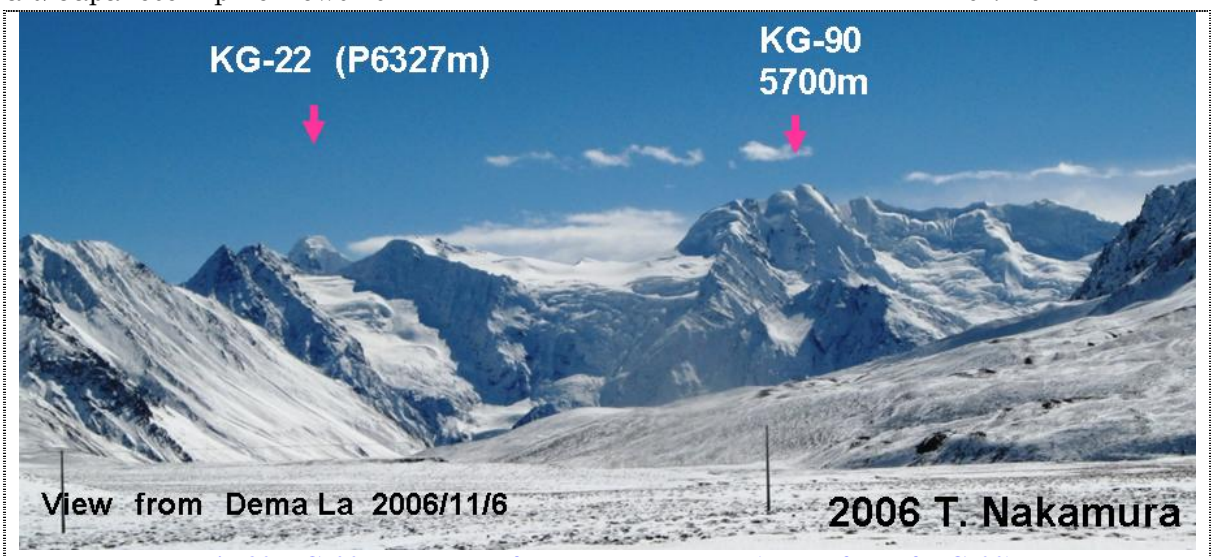


Fig 32 KG-22 can be seen from Dema La area (North face of KG-22)

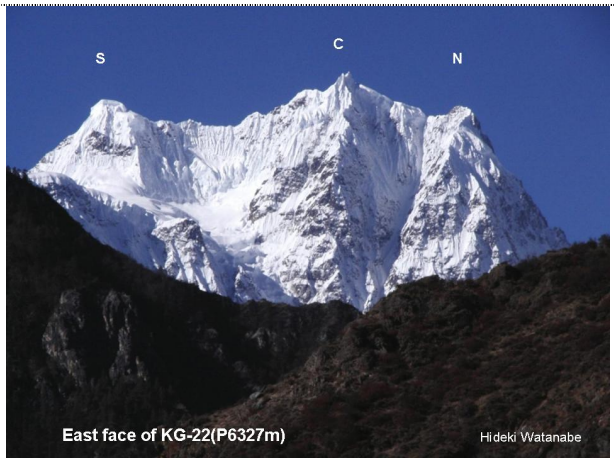


Fig 33 East face of KG-22(6327m)
View from the road to Zayul
Hideki Watanabe

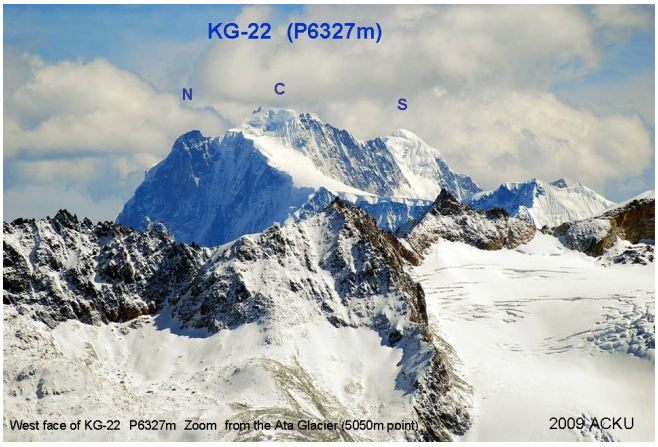
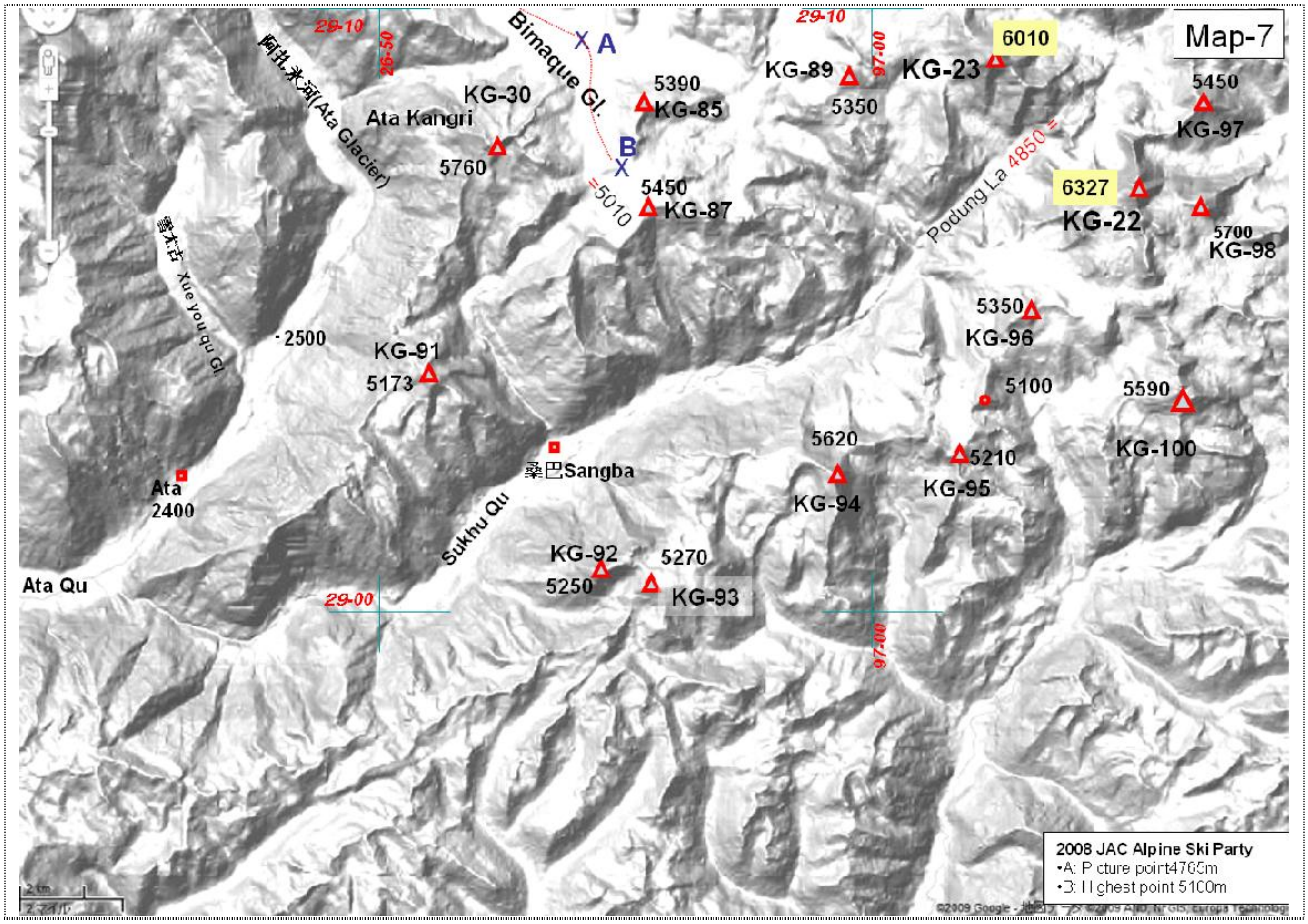


Fig 34 West face of KG-22
View from 5050m point in the Ata Glacier

Fig 35
KG-23(6010m) view from 5050m point in the Ata Glacier

The black rocky head of KG-22 North Peak is clearly identified in three directional pictures (north, west and east; Fig.32, 33 and 34). KG-23 (6010m) is a conical snow covered peak which I saw from the Ata Glacier in 2009. Another remote picture of KG-23 was taken from 4765m point in the Bimaque Glacier (Point "A" in Map-7) in 2008 by Osamu Matsuo .It is too small to find good figure from this picture.

KG-23 is not visible from Dema La area.



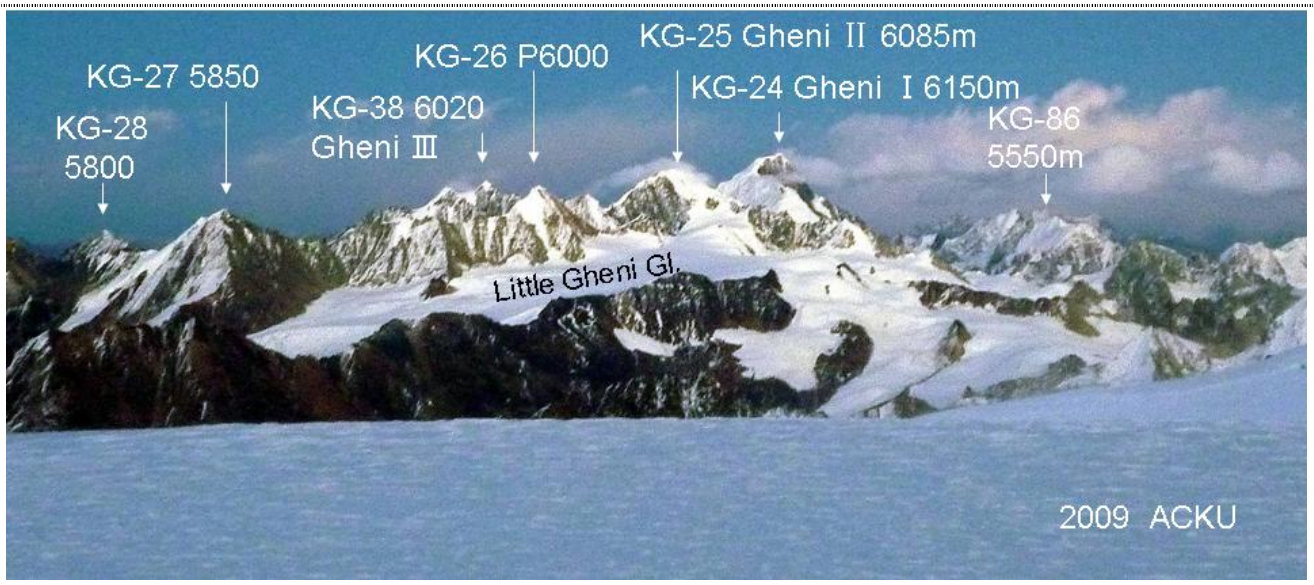


Fig 36 KG-38(GheniⅢ,6020m) was newly found.

◆ Discovery of KG-38(Gheni-Ⅲ) and KG-26

Currently KG-24 (6150m) and KG-25 (6085m) were recognized as Gheni Ⅰ and Gheni Ⅱ. A picture taken by ACKU in 2009 from Camp-3 (5910m) on the Ruoni

Terrace revealed the existence of twin peaks of KG-38(6020m) as Gheni Ⅲ(Fig.36). Subsequently to this discovery, reviewing a picture taken by Hideki Watanabe from Dema La area, KG-38 is clearly identified (Fig.37).

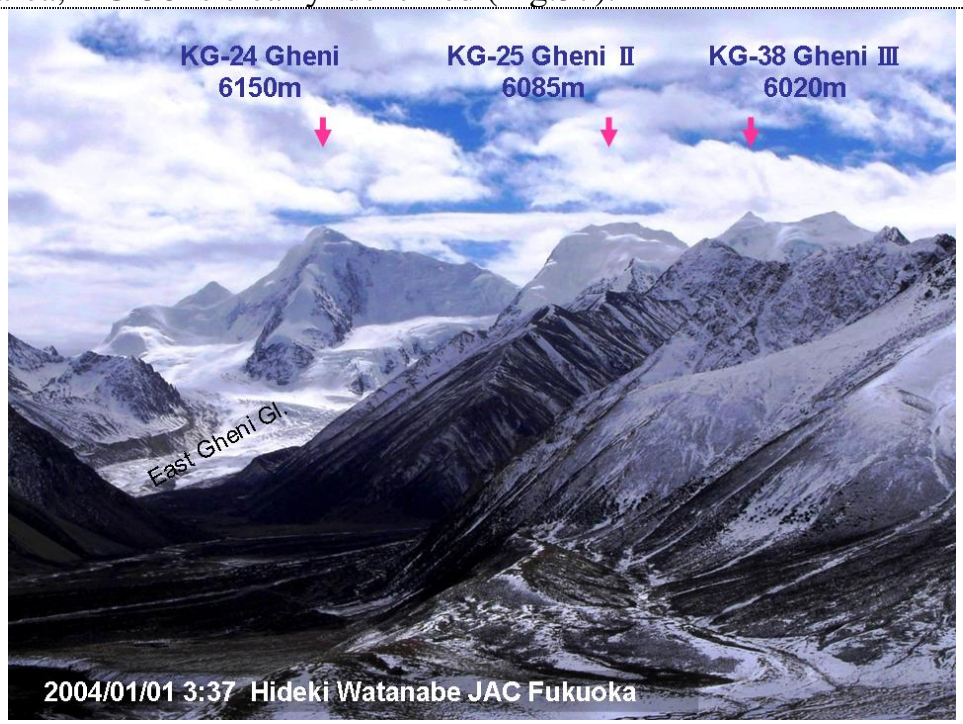


Fig 37 Three peaks of Gheni Feng group

KG-26 (6000m) was a hidden peak before a picture had been taken from the Ata Glacier. KG-26 stands on the deep Valley of the Little Gheni Glacier near the watershed of the Gheni Glacier (I did not find name on this glacier. These are temporary names.) where a snow pass reaches the origin of the West Gheni Glacier. KG-78 (5850m) rises just on the pass (Fig.38 and 39).

Fig 38 KG-26(6000m) was found from 5050m point in the Ata Glacier.

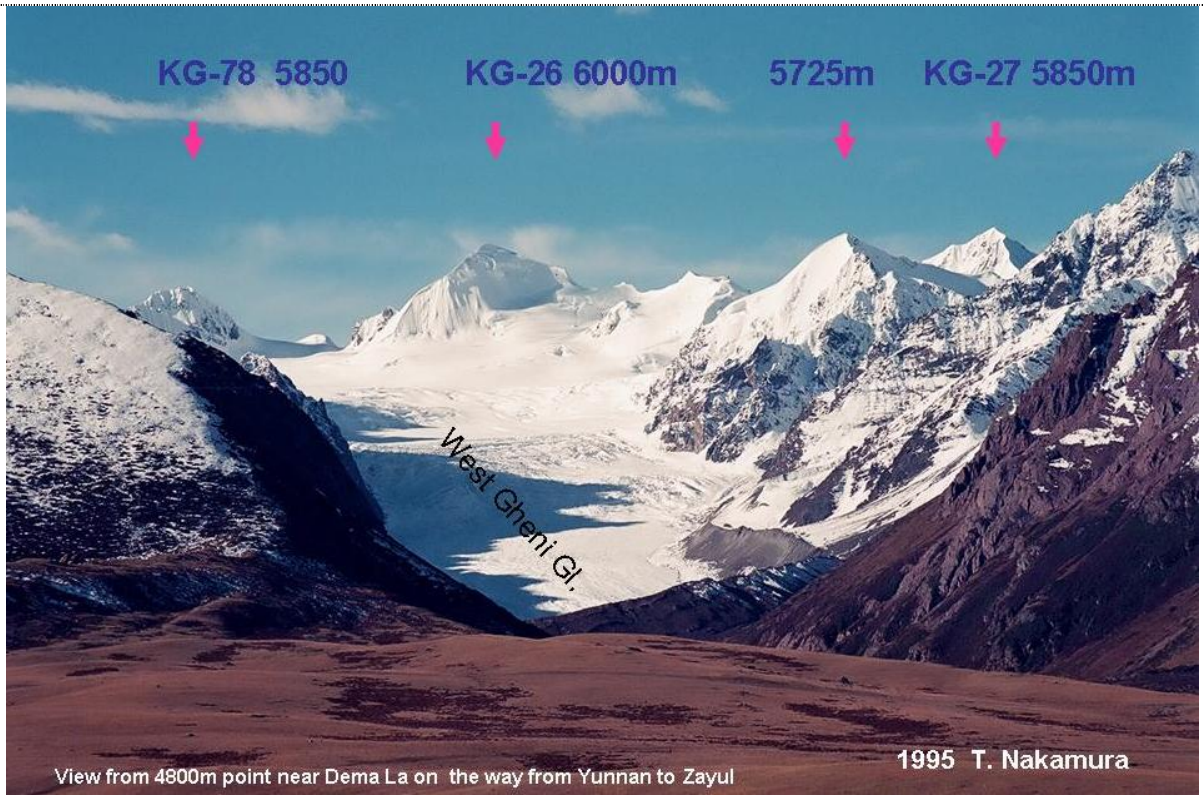


Fig 39 West Gheni Glacier view from Dema La

Discovery of peaks is the most exciting pleasure for those who are involved in mountaineering. Since there was no map and no satellite sensing technology, a plant hunter F. Kingdon Ward had enjoyed his travel to the Kangri Garpo Mountains with many discoveries in his early 20th century. Today, we are feasible to exploit state-of-the-art technologies to support discovery of mountains such as ASTER, Computerized-Transit, digital Camera with GPS and others. Even though Chinese authority will never allow us to access précised map and data, we can integrate information that climbers and travelers provide and create comprehensive outline of mountains.

I think my study about Kangri Garpo has just started. The range is still remaining unknown and unexplored. I hope my study will be supported by people who are going to visit this range from now on. It is a miracle that we have the large field where no human steps on in 21st century.

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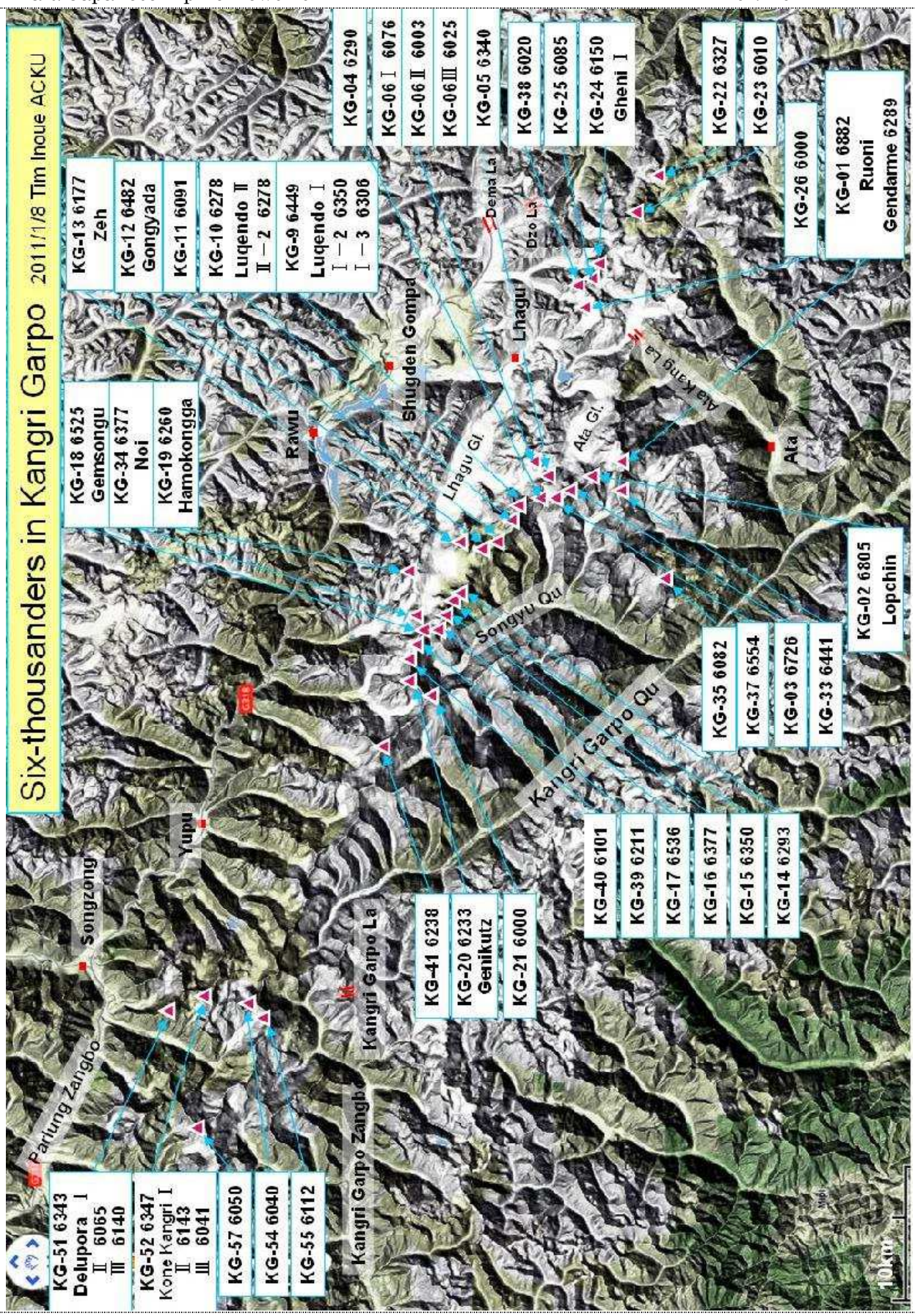

Map-10 Hidden 47 Six-thousanders in the Kangri Garpo mountains