

# Hong Meigui Zhongdian Draughting Holes 2006 Expedition



Cave expedition to Yunnan Province, China

1st to 24th February 2006

## Final Report



Hong Meigui Zhongdian Draughting Holes 2006 Expedition Report. ©Hong Meigui Cave Exploration Society, December 2006.

Report prepared by Hilary Greaves. This report is available online from the Hong Meigui website, and may be freely copied for private use.

Cover photo: Peter Ljubimov 'shaftbashing' C3-426. Photo by Dmitry Parshin.

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Hong Meigui Cave Exploration Society website:

<<http://www.hongmeigui.net>>.

The Hong Meigui Zhongdian Draughting Holes 2006 expedition was approved by the Royal Geographical Society (with the Institute of British Geographers).



## **Abstract**

Hong Meigui Zhongdian Draughting Holes 2006 was a three week cave exploration expedition, following on from several previous Hong Meigui expeditions to the same area. The primary aim of the 2006 expedition was to locate entrances to high-altitude caves of significant depth by spotting melted gaps in light snow cover caused by warm cave air. In the event, there was not enough snow to pursue this strategy. The expedition logged 26 new minor cave entrances.



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# 1 Overview

Hong Meigui Zhongdian Draughting Holes 2006 was a 4-person, 24-day expedition to the mountains just west of the town of Zhongdian, Yunnan Province, China.

This expedition was part of an ongoing project whose aim is to find caves of world-class depth. Previous expeditions to the same area (Hong Meigui Yunnan 2001, 2002 [HMG02], 2003 [HMG03], Resurgences 2004, 2004 [HMG04], 2005 [HMG05]) had logged some 401 caves in the Zhongdian mountains, most at altitudes in excess of 4000m. The area drains to resurgences in the adjacent Yangtze valley, at 2000m ASL.

However, despite the number of cave features and the phenomenal depth potential, it was proving very difficult to find caves of depths in excess of 50m. The main reasons for this were the vastness of the area, and the fact that the majority of entrances choke within 10m.

Expeditions elsewhere in the world have found that a highly efficient way of locating entrances to caves of significant volume is often to visit the area of interest when it has light snow cover. The point here is that, in the winter, cave air is typically warmer than air on the surface and, in particular, tends to remain above freezing point; further, caves of significant volume often emit a draught. Because of these two factors, it is common to find gaps in the snow at significant cave entrances, where the warm draught has melted the snow cover. This means that it is sometimes far easier to identify caves of interest in the winter than in the summer, despite the increased difficulties of moving around the mountain.

The purpose of the 2006 expedition was therefore to visit the area when it was expected to have light snow cover, and to log the locations of ‘draughting holes’. We hoped that this would enable us to identify caves that deserved further attention, so that the efforts of future summer expeditions could be focussed in the most fruitful places.

In the event, however, the expedition’s plan was thwarted by the fact that when we arrived in Zhongdian, there was no snow on the mountaintops (for the first time in living memory, at this time of year!). We therefore changed plan, and carried out a recce of an area identified as interesting by the Yunnan 2004 expedition (north of the ‘Northern Camp’ visited in 2004). Towards the end of the expedition (and following snowfall), we returned to the Ye Kang area. Some new caves were found, but none of great significance. Findings and suggestions for future work are summarized below.

The expedition’s logistics were sufficiently similar to those of summer expeditions to the area that details are not duplicated here; for the details, see, e.g., the 2004 report [HMG04].

## Summary of expedition activities and findings

### Draughting holes

As mentioned above, the expedition’s primary aim — to search for draughting holes through snow cover — was thwarted by inappropriate snow conditions.

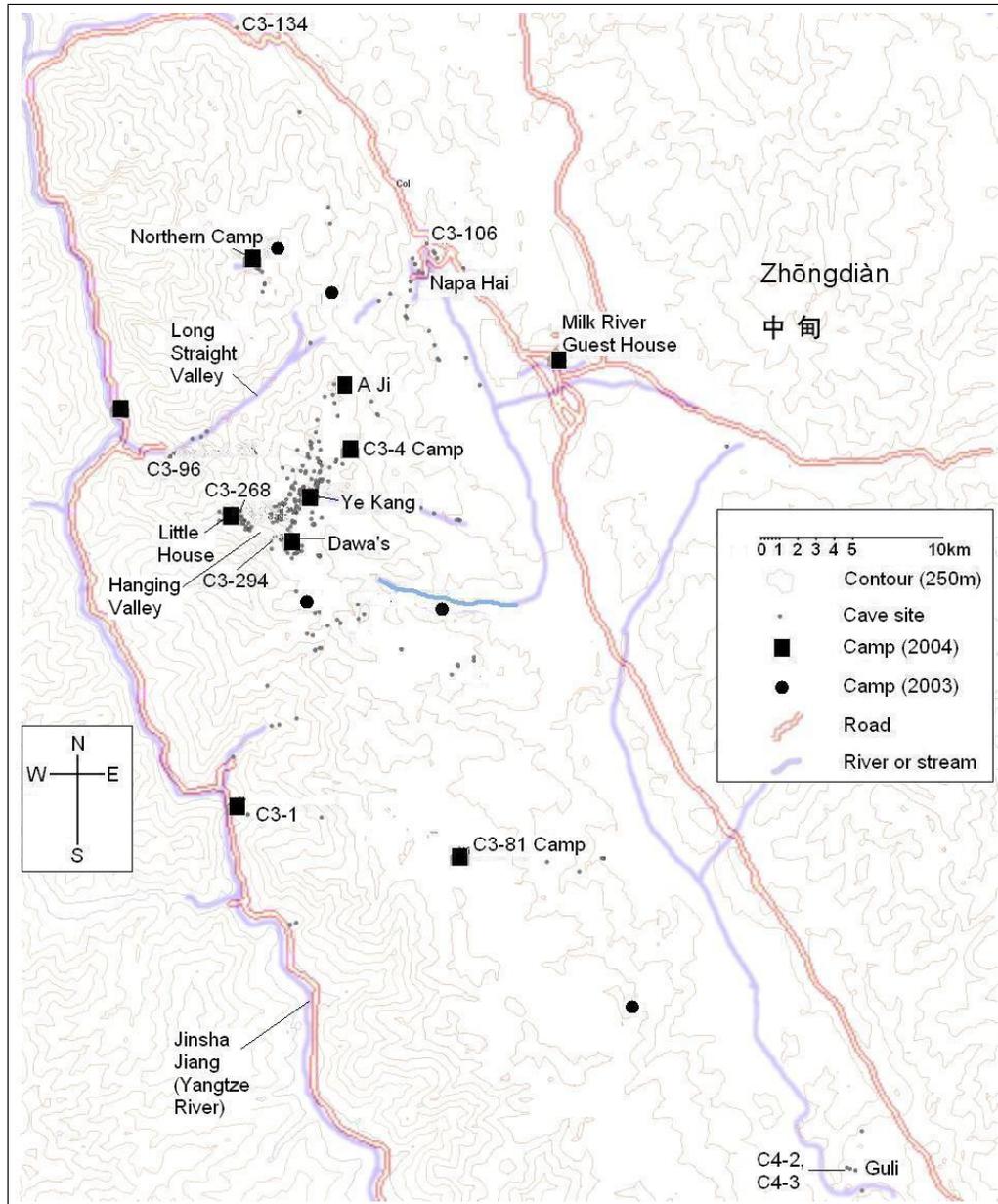


Figure 1: Map of Zhongdian area, showing Ye Kang, Aji, and the resurgences C3-1 (Shui Lian Dong) and C3-96 (Lucky Benevolent Waters). The ‘Northern area’ explored in 2006 lies just of the north of the ‘Northern Camp’ labelled on this map.

Early in the expedition there was almost no snow on the ground at all; later it snowed, but there was not time for the sought-after draughting holes to form before we left.

### **Resurgence reconnaissance**

The expedition visited the area's largest known resurgences, C3-1 (Shui Lian Dong) and C3-96/97 (Lucky Benevolent Water), to take temperature measurements to inform planning for a possible future diving expedition. The water temperature at C3-1 was found to have a temperature of 50 degrees; the water temperature at C3-96 was found to have a temperature of 54 degrees (Fahrenheit).

### **Reconnaissance of northern area**

The expedition spent five days in the area just to the north of the 2004 expedition's 'northern camp' (see map). This area had looked promising during initial reconnaissance in 2002 and 2004, as it consisted of exposed limestone on peaks, and undulating ground riddled with closed depressions in valleys. However, shaftbashing the area yielded decidedly disappointing results. This area is not worth returning to.

### **Shaftbashing in Ye Kang area**

The expedition spent one day in the area just south of Aji on its initial acclimatization camp, and three days between Aji and Ye Kang on its final (ski-ing) camp. Neither of these camps were ideally equipped for shaftbashing (the first because we were carrying minimal equipment and were primarily concerned with acclimatizing to the altitude; the second because everything was buried under up to a metre of snow). 9 new entrances were logged (C3-402 to 408, C3-426 and C3-427). Of these, C3-408 (a draughting dig at 20m depth) would be worth returning to if there is a future expedition to these mountains. The expedition also descended C3-69 (Subvertical Pot) to look for any windows through to parallel shafts that might have been missed by the 2004 expedition. One shaft not marked on the 2004 survey was explored, but this terminates at an estimated depth of 90m; several further windows and alcoves were checked, but led nowhere.

The 2006 expedition recorded a correction to the 2004 expedition's GPS data for C3-69 (see 'Cave descriptions and locations', below).

### **Suggestions for future work**

Collecting together the experience of the 2002—2006 expeditions in Zhongdian, the following remarks are made on possibilities for further exploration in this area.

Suggestions are graded from A (most promising) to C (least promising). Numbers in brackets indicate expedition reports containing further information.

**‘Draughting holes’ snow recce expedition (B).** It may be worth trying this tactic again, especially in the area around Ye Kang and between Ye Kang and Aji. The difficulty is that any expedition with pre-assigned dates (as opposed to a locally based team heading for the mountains when conditions look good) takes a risk on the presence or absence of the required snow conditions. Any future expedition with this aim would be well advised to have one or more ‘plan B’s for how usefully to spend its time in case of unhelpful weather.

**C3-294 (Dawa Dong) (A).** This spectacular entrance shaft has been explored to a tight draughting rift at 130m depth. The rift may very well reward a concerted pushing effort by some thin and/or very determined cavers. An exciting but challenging prospect. (2004)

**Area immediately north of Long Straight Valley (A).** This area was identified as promising by the 2004 expedition. A 2-man, 2-day recce at the end of the 2005 expedition confirmed that the area looks promising, but lacked the time to explore further. The area has not been further explored to date, and merits a serious summer shaftbashing trip. (2004, 2005)

**Ye Kang/Aji area (B).** This area contains apparently good rock and numerous entrances, but has received a lot of shaftbashing effort, and it is proving very difficult to break through the shattered surface layer. (The area’s deepest known cave to date is Subvertical Pot, which chokes at 113m.) Further trips to the area continue to make new minor finds; reports back from the area tend to be either ‘promising’ or ‘frustrating’, depending on the team member’s mood at the time of reporting (both are true). The area *may* reward further shaftbashing and/or strategic digging, either in summer conditions or in appropriate snow conditions. The area further north (i.e. closer to Aji than Ye Kang) has received less attention to date, but also seems to have less good rock.

Caves in this area that a summer expedition should consider returning to include:

- C3-408 (B). A draughting dig at 20m depth (2006).
- C3-199 (B). A promising surface dig (2004, 2006).
- C3-223 (B). This cave was been explored to the head of an undescended 20m pitch at 10m depth by the 2004 expedition. The Yunnan 2005 expedition tried and failed to re-locate the cave. (2004)
- C3-69 (C). This cave has been fairly well explored, but some loose ends remain that could usefully be tied up by a team in the area, if time permits and trips underground are desired. The current survey is incomplete. There are two possible digs, at the bottoms of parallel shafts. (2004, 2006)
- Numerous other entrances recorded as ‘undescended’ or ‘not bottomed’: consult the latest version of the Hong Meigui Zhongdian caves database.

**Area to the west of C3-294 (Dawa Dong) (C).** It might be interesting to explore this area further, but steep pinnacles and dense forest make prospecting difficult. The ideal would be to find locals who could show us any caves they have come across during the course of their farming; this would require visiting the area during the peak of the summer farming season (July), to see whether or not anyone lives in the huts we've come across. (2004, 2005. This area is referred to as 'Little House area' in the 2004 report.)

**Diving resurgences (A).** The area's major known resurgences are C3-1 (Shui Lian Dong) and C3-96/97 (Lucky Benevolent Water), both in the Yangtze valley. In the dry season (November-April), Shui Lian Dong can be followed upstream for 1.3km to three sumps, at least one of which appears to be wide open and diveable. C3-96/97 is a surface rising; the water appears at the base of a cliff through what *looks* like an impenetrable boulderchoke, but a diver with a wetsuit could move some rocks around underwater and see whether there is an open way through. It is impossible to get anywhere near the sumps in summer (wet) conditions. (2004)

**Searching for fossil resurgences (B).** One of the easiest ways to make speleologically significant progress in the area would be to find a fossil resurgence above C3-1 and C3-96/97 in the Yangtze valley, facilitating dry access to the main underground collector(s) and opening up the possibility of 'bottom-up' exploration. The Yunnan 2005 expedition spent some time searching for such fossil resurgences, with disappointing results. Due to the importance of this possibility to the overall project, however, there would be no harm in a second team forming an independent opinion of this prospect. (2005)

**C3-338 (A).** This is a complex system on the east side of the mountain, found in 2004 and partially explored in 2005. It would be interesting to explore the system fully. The cave is flood-prone, and should be explored in the dry season. This would make a good side-project for a sufficiently large winter expedition with a primary aim of (e.g.) ski-ing or diving. (2005)

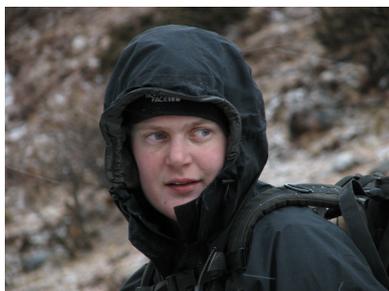
**C3-106 (C).** This stream cave was explored to a wet floor slot in summer 2004. It may be possible to push the cave further in the dry season. Again, a good side-project for a winter expedition. (2004)

**Water tracing experiments.** Since we have not found any underground streams in the high-altitude areas we are most interested in, the 'high-altitude-to-resurgence' traces that would have the most immediate speleological interest are not yet feasible. However, dye-traces may nevertheless help to illuminate the area's hydrology, with both speleological and other benefits. The following traces have been identified as promising by previous expeditions: (i) C3-338 to C3-118; (ii) C3-106 and C3-109 to C3-134; (iii) a stream in the valley directly above C3-1 to C3-1. Our contact at Yunnan University has indicated interest in such experiments. (2004, 2005)

**Summary.** Collating the above suggestions, the following two trips seem, in the opinion of this caver, the most worthwhile:

1. A winter diving expedition to push the sumps in C3-1, with secondary aims (if manpower permits) of pushing C3-97, searching for fossil resurgences, and exploring C3-338.
2. A summer trip to push C3-294 and prospect north of the Long Straight Valley, with a secondary aim of continuing exploration in the Ye Kang/Aji area.

## 2 Expedition members



HG: Hilary Greaves  
UK  
Expedition Leader



PL: Peter Ljubimov  
Russia  
Filmmaker



DP: Dmitry Parshin  
Russia  
Gear officer



AO: Artem Oganov  
Russia  
Photographer

### 3 Expedition diary

Camp	Date	Who	What
-	02.01	HG	Arrive Kunming
-	02.02	PL, DP, AO	Arrive Kunming
-	02.02	All	Meeting with Liu Hong. Night bus to Zhongdian.
-	02.03	All	Arrive Zhongdian. Gear sorting. Acclimatization.
Aji	02.04	All	Start of lightweight acclimatization camp: move from Zhongdian to camp in valley below Aji.
	02.05	All	Move camp from valley to edge of plateau.
	02.05	HG, DP	Evening recce/sightseeing trip towards Ye Kang.
	02.06	All	Shaftbashing southwest of Aji. Log C3-402 to C3-408, and C3-401.
	02.07	All	Return to Zhongdian.
-	02.08	All	Daytrip to visit resurgences (C3-1 and C3-96).
Northern	02.09	All	Zhongdian to Cairn Junction.
	02.10	All	Move camp from Cairn Junction to Big Lake.
	02.10	HG, DP	Investigate closed depressions at top of Yak Flats Forest valley.
	02.10	PL, AO	Shaftbashing. Log C3-409, C3-424.
	02.11	All	Move camp to Yak Flats Forest.
	02.11	HG	Shaftbashing on tops. Log C3-410 to C3-414.
	02.11	DP	Shaftbashing in Depression Valley. Find nothing of interest.
	02.11	PL, AO	Digging in C3-424.
	02.12	HG	Shaftbashing in Depression Valley and on ridge to west. Log C3-416 to C3-420.
	02.12	PL	Shaftbashing in Depression Valley. Dig C3-424.
	02.12	AO	Dig C3-424.
	02.12	DP	Shaftbashing in Yak Flats Forest, and around peaks to north. Log C3-421.
	02.13	HG, PL, AO	Dig C3-424.
	02.13	HG, DP	Shaftbashing on The Nose. Log C3-423.
	02.14	All	Return to Zhongdian.
-	02.15	All	Rest day in Zhongdian.

Camp	Date	Who	What
Ye Kang	02.16	All	Zhongdian to valley below Gavin's Dong, on skis!
	02.17	All	Move camp to village on edge of plateau.
	02.18	All	Dig C3-408.
	02.19	All	Trip to C3-69. DP, PL descend. Log C3-426. Crazy trek home through rhododendron (on skis ...) in fading light.
	02.20	All	Return to Zhongdian.
-	02.21	DP, AO	Visit sinks
-	02.22	All	Gear sorting. Night bus to Zhongdian
-	02.23	All	Night bus to Kunming.
-	02.23	PL, DP, AO	Depart Kunming.
-	02.23	HG	Meeting with Liu Hong.
-	02.24	HG	Depart Kunming.

## 4 Cave locations and descriptions

*All but three of the caves whose details are recorded below are new finds for 2006. The exceptions are C3-69, C3-106 and C3-199. The descriptions in this report for C3-69 (description updated and GPS coordinates corrected) and C3-199 (description corrected) supersede those in the 2004 report. The C3-106 description is reproduced here to accompany the survey in section 5.*

### ⊗C3-69 Subvertical Pot

**Location:** UTM 0554939 3072376 Alt. 4206m. In the vicinity of Yě Kāng village.

**Description:** Entrance is 2m diameter vertical shaft. First pitch is a 33m free hang belayed to rhododendron with a rope protector or tacklesack over the lip. A further 60m of rope suffices for several short hangs interspersed by ledges, followed by a drop of approximately 30(?)m to a ledge opposite a window. From here, there are two ways to descend further. Continuing down in the same shaft (unsurveyed), a 25m rope suffices for a drop to a descending boulder floor, which terminates in a dig (no draught). Back at the ledge, swinging across and passing through the window gains a 5m diameter parallel shaft (surveyed). This parallel shaft continues upwards and has not been climbed; dropping down the shaft, a 50m rope suffices for a drop in 4 hangs to a choked floor and a small pool. There is a small draught in this lower section. Three apparent windows have been explored on this bottom hang, and found to be alcoves. It may be possible to dig at the bottom, next to the pool.

The cave is rigged on a mixture of through bolts (placed in 2004) and spits (placed in 2006). *RGe, RB, DC, SFl (2004); PL, DP (2006)*

### ⊗C3-106 Nai Gan Dòng; Mint/Conglomerate Cave; 乃干洞

**Location:** UTM 0562114 3087146 Alt. 3248m. Located at the north end of

Napa Hai, close to the track that runs alongside the lake. The cave entrance is just downstream of a small lake outflow that runs under the track.

**Description:** Entrance is a large (10m high x 5m wide) downhill passage, taking a small stream. Climb down over boulders and down through small hole at front left of entrance chamber to enter the cave proper down steep slope. This gains a stream passage, with the water occupying most of the width of the passage. It is possible to traverse on the right-hand side for 8m, until a 4m free-climbable cascade is reached. 5m beyond this is a second cascade, which can be free-climbed (but a handline is useful!) by teetering down a steep conglomerate bank on the lefthand side of the passage. 10m of easy walking passage lead to a free-climbable cascade and then a further two cascades in close succession, which can be rigged from an enormous conglomerate feature that is part of the right-hand wall. [At the bottom of the final cascade, some of the water drains away through a steep descending body-width slot at floor level. This slot has been explored feet first to neck depth, but water began to back up around the caver's body. It may be possible safely to explore this slot by diverting the small proportion of water that usually flows through the slot along the main stream passage (using sandbags or similar), leaving the slot itself dry.] Downstream, the cave continues as easy meandering walking stream passage, gradually diminishing in height until a sump is reached after 20m.

The entire cave is in conglomerate.

Notes: On one visit to this cave (after a period of relatively dry weather), the water had backed up to the entrance. Care must be taken not to swallow the cave water, as the cave drains the fetid Napa Hai. *AA, RB, DC, SFl, HG, RGe, FL, MLa, PT (2004)*

### ○C3-199

**Location:** UTM 0554918 3072455 Alt. 4244m.

**Description:** Draughts. "It would need digging to open it up, but a few slings and a couple of strong cavers should do the trick." *AA, DC (2004)*

### ⊗C3-402

**Location:** UTM 0555334 3075188. On NNE-facing slope. 20m WNW of small cairn.

**Description:** 3m x 5m vertical shaft, 5m deep to boulder floor. 40cm diameter tube at floor level leads downward. Possible continuation at end of tube, but too tight at present (would require drill/hammer/etc.). No draught. Unpromising. *AO, PL*

### ⊗C3-403

**Location:** UTM 0554935 3075363 (EPE 10m). On east-facing slope.

**Description:** 1m deep, 30cm wide vertical hole at bottom of small shakehole. No draught. *HG, AO*

### ⊗C3-404

**Location:** UTM 0554729 3074938 (EPE 9m). On south side of small bowl.

**Description:** *DP, HG*

⊗**C3-405**

**Location:** UTM 0554642 3074741 (EPE 8m). Small hole at bottom of 4m diameter, 2m deep shakehole on undulating ground. Entrance is on SE side of shakehole.

**Description:** Small hole leads downwards at 45 degrees for 2m +. It would be possible to insert a caver in this hole by digging out part of the earth floor at the entrance, but the prospect looks unpromising. No draught. *HG*

⊗**C3-406**

**Location:** UTM 0554616 3074701. 7m diameter, 5m deep shakehole, on undulating ground.

**Description:** 3m wide, 1.5m high, 2m deep alcove. Small hole at bottom left-hand corner could be dug, but unpromising. No draught. *HG*

⊗**C3-407**

**Location:** UTM 0554805 3074676 (EPE 9m). On small ridge running NE(up)—SW(down).

**Description:** 7m deep blind vertical pit, 1m x 3m cross-section. *DP, HG*.

⊗**C3-408**

**Location:** UTM 0554893 3074736 (EPE 10m). In shakehole 10m long x 5 m wide x 5m deep. Shakehole is part of a line of shakeholes running NW-SE, on undulating ground. Entrance is towards west end of shakehole.

**Description:** Hole dug open. Currently 70cm diameter; could easily be widened further. 20m entrance pitch lands on a rubble floor. (Rig from sling and bolt at pitchhead; backup required, but may be difficult to find [in 2006 snow belay was used as backup]. Requires 2 rope protectors on current rig.) Immediately afterwards, a hole at floor level leads to a chossy 2m climb down to a dig. The cave draughts significantly (noticeable both at the entrance and at the dig; draught was outward when cave was found in fine February weather, and inward one week later in snow conditions. Relatively easy progress at dig front; possible to dig with two people, but 3 or even 4 would be ideal. A promising prospect. Worth a return. *DP, HG, AO, PL*

⊗**C3-409**

**Location:** UTM 0551289 3088249 (EPE 12m). On a flat section, no more than 10m from a steep dropoff.

**Description:** 1m diameter vertical hole, free-climbable for 6m until diameter narrows to 40cm. Possible continuation, but would require persuasion to widen. Possible draught (difficult to tell), but not strong. *AO, PL*

⊗**C3-410**

**Location:** UTM 0550445 3089160 (EPE 14m). In 5m diameter x 3m deep shakehole, in large depression 150m SE of The Nose.

**Description:** 1.5m deep body sized hole at bottom of small rock outcrop in

shakehole. No draught. Not really a cave. *HG*

⊗**C3-411**

**Location:** UTM 0550452 3089551 (EPE 31m). On slope opposite (and NE of) The Nose.

**Description:** Alcove, 7m wide x 6m high x 5m deep. A horizontal body-sized, sandy-floored slot at floor level at LH end appears to terminate after 3m. *HG*

⊗**C3-412**

**Location:** UTM 0550452 3089551. 20m up and left from C3-411.

**Description:** Alcove, 9m wide x 3m high x 3m deep. A stooping passage at the back degenerates to body size and terminates after a further 2m. *HG*

⊗**C3-413**

**Location:** UTM 0550657 3089822 (EPE 9m). GPS point is 10m east of cave. Cave is on small east-facing cliff, 100m north of col.

**Description:** Ascending alcove, 4m deep. *HG*

⊗**C3-414**

**Location:** UTM 0550637 3089796 (EPE 15m). 30m south of C3-413.

**Description:** 5m long x 2m wide x 1.5m high chamber, with pebble floor. 2 entrances, the right much larger than the (body-sized) left. Decent bivvy site. *HG*

⊗**C3-415**

**Location:** UTM 0549543 3090049 alt. 4173m (EPE 10m). On saddle at north end of Depression Valley.

**Description:** 1m diameter, 4m deep vertical hole, choked. *DP*

⊗**C3-416**

**Location:** UTM 0549586 3089688 (EPE 11m). In a line of small shakeholes running NNW-SSE, near N end of Depression Valley. Dig is in shakehole furthest to NNW. This shakehole is 5m long x 2m wide x 3m deep.

**Description:** Surface dig in shakehole. Dug for 1 hour. No draught or black space. *HG*

⊗**C3-417**

**Location:** UTM 0549735 3089381 (EPE 17m). 15m up from base of steep rockface, SE of C3-416.

**Description:** Alcove, 2m wide x 1m high x 3m deep. *HG*

○**C3-418**

**Location:** UTM 0549740 3089230 (EPE 26m). GPS point is 20m NW of (i.e. down and right from) cave. Cave is 5m below ridge.

**Description:** Not visited. *HG*

⊗**C3-421**

**Location:** UTM 0551061 3089742 alt. 4108m (EPE 12m). GPS point is on

bearing 200 degrees from cave.

**Description:** 10m high x 5m wide entrance leads to 40m of passage with ascending floor and descending roof, closing down to a point. *DP*

○**C3-419**

**Location:** UTM 0549922 3089267 (EPE 21m). On ENE-facing (steepish) slope flanking S end of Depression Valley.

**Description:** Long narrow vertical fissure. At one point the fissure becomes more than body width, and black space is visible to an apparent floor 5m down. Could be free-climbed with care. *HG*

○**C3-420**

**Location:** UTM 0549838 3089363 (EPE 9m). Halfway down ridge that runs NNE from 4450m spotheight down into Depression Valley. Shakehole is on top of ridge.

**Description:** 2m long x 1m wide shakehole, full of snow [feb 06]. Draught not apparent to hand, but the pattern of snowmelt suggests the presence of an outward draught. *HG*

⊗**C3-422**

**Location:** UTM 0550595 3089281 (EPE 22m). 10m up cliff that flanks N side of the easternmost of 3 closed depressions at NW end of Yak Flats Forest Valley.

**Description:** Looks like a cave/alcove from below, but is nothing. *HG, DP*

⊗**C3-423**

**Location:** UTM 0550407 3089267 (EPE 25m). On mini-ridge in gully that leads down from col below The Nose to Yak Flats Forest.

**Description:** 12m long, 5m wide, 7m deep blind pot. Small passages at each end both choked. *HG, DP*

⊗**C3-424**

**Location:** UTM 0551112 3088609 (EPE 9m).

**Description:** Excavated stream sink at base of 5m cliff leads down 5m climb into approx. 10m of 45 degree downward sloping passage, to a dig.

○**C3-425**

**Location:** 30m up cliff, WSW of C3-416. Looks like a feasible (??) free-climb, with the possible exception of the top 5m.

**Description:** Hole in cliff. Not visited. *HG*

⊗**C3-426**

**Location:** UTM 0555964 3073186 (EPE 10m). East of Ye Kang.

**Description:** 5m climb down steep-sided shakehole leads to a further 5m climb down. At bottom, passage continues horizontally for 5m +. Narrow. Wants oversuit. Passage continues. *PL, DP*

⊗C3-427

**Location:** UTM 0555484 3075126 alt. 4313m (EPE 7m). In steep-sided shakehole.

**Description:** 4m diameter tube with rocky floor leads down at 45 degrees for 20m to a 10m wide chamber. Choked. *DP, HG*

## 5 Surveys

The following two surveys were compiled by the Yunnan 2004 expedition, but were not published in the 2004 report due to editorial error.

The surveys use the UIS symbol set (see figure 2).

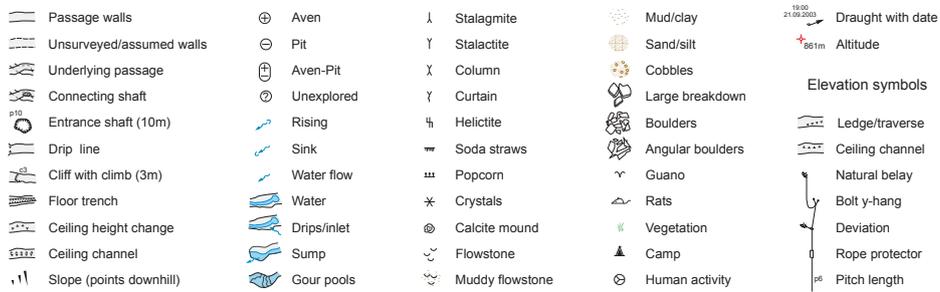


Figure 2: UIS symbol set

# C3-69

Subvertical Pot  
Yunnan, P. R. of China

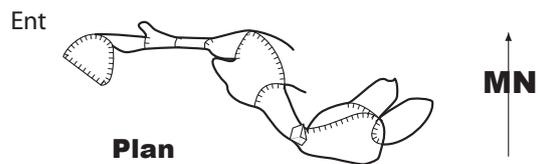
WGS84 UTM 47R 0554939 3072376  
Altitude 4206 m

Length 122 m Depth 113 m

Surveyed to BCRA Grade 5b  
by Hong Meigui CES August 2004

Survey Team : Duncan Collins  
Simon Flower  
Computer Graphics by Andrew Atkinson

Based on UIS symbol set



# C3-106

乃干洞

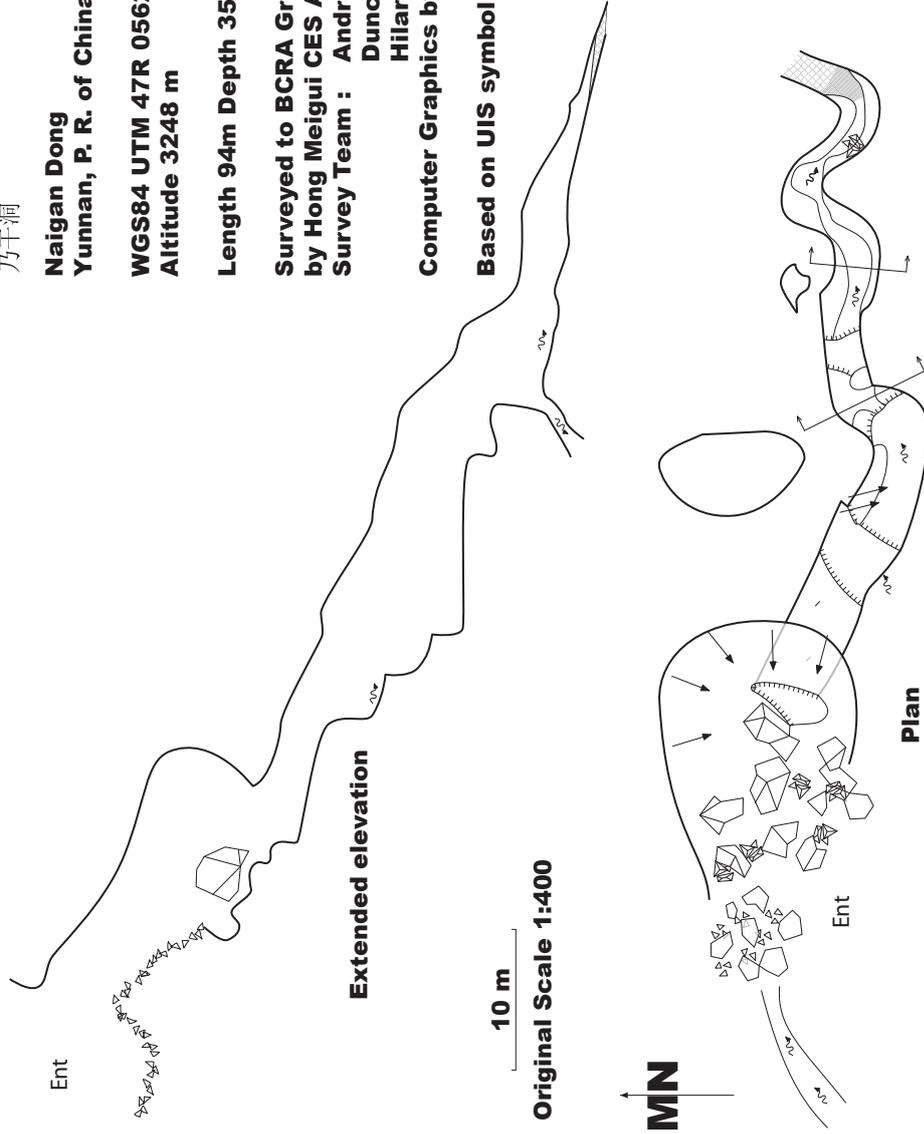
Naigan Dong  
Yunnan, P. R. of China

WGS84 UTM 47R 0562114 3087146  
Altitude 3248 m

Length 94m Depth 35m

Surveyed to BCRA Grade 5b  
by Hong Meigui CES August 2004  
Survey Team : Andrew Atkinson  
Duncan Collis  
Hilary Greaves  
Computer Graphics by Andrew Atkinson

Based on UIS symbol set



## 6 A personal perspective

### ‘Of caves and cavers’

*Hilary Greaves*

Prior to the expedition, I had been a bit apprehensive about keeping up with these three Russians I had never met before, under winter mountaineering conditions. I had been going to the gym every morning for a month but still, I had this vague idea that Russians were both dead’ard and born in the snow, and I am not a particularly great skier. So, when we had arrived in Zhongdian to find barely a sliver of snow in sight, some part of me had secretly been relieved — despite the tits-up factor it implied for the expedition’s intended aim. Since then, however, the weather had become something of an expedition joke — glorious sunshine virtually every day, way better than any weather the summer expeditions in Zhongdian had seen — and we wouldn’t mind at least getting to *use* this shiny expensive ski kit we had dragged all the way to China.

On the evening of the 15th, as we sat in a cafe in Zhongdian, we found ourselves watching the snow fall. ‘I think is evens we go to mountain tomorrow or not,’ commented Artem. ‘Well, either is possible to go without ski, or is possible to go with ski,’ I replied half-seriously, in the same Pigeon English that had become the official language of the expedition.

The morning of February 16th was a whiteout. There was some discussion of sitting in Zhongdian and waiting out the weather, but by now the irony of the situation was too much for all of us: we come here for winter expedition and now we will not go to mountain because snow, no, this is not right . . . A plan was quickly hatched to head for the hills, and to take our skis with us. We rubbed yak butter into our walking boots, strapped our skis to our packs and headed out in search of an unusually spacious taxi.



*Artem and Peter struggle uphill against the altitude. (DP)*



*Artem takes in the scenery, on the first camp of expedition. (DP)*

One jeep ride later, it was apparent that the walking boots were going to be somewhat superfluous. We were slogging our way uphill in a good couple of feet of powder, and the higher we went the deeper the snow got.

I had stitched myself up on a comical scale in packing my rucksack, and now I was paying for it. The night before, Peter had been ill, so I had grabbed all the gear I could find, steadfastly refusing to give the extra 50m rope to Dima in the hope that, if Dima ‘Ma-

chine' Parshin couldn't steal stuff from me to fill his 100 litre rucksack, he'd have to steal it from Peter instead, and then Peter wouldn't have too bad a carry. (I had long since given up on the direct 'you are ill, so we will carry some of your stuff and you can take a light bag today' approach: that would work if attempted by a male, but when attempted by a female was apparently anathema to Russian principles of chivalry.) Now, however, Peter was probably the strongest member of the team, as the rest of us had picked up some food bug, and I was trailing well off the back of the party. I had carried bags I could barely lift before, I had ski-ed uphill before and I had worked at altitude before, but all three at once was a new one on me, *damn* this was hard work. Fortunately, just as I collapsed in a pile of snow on a particularly steep rise, Dima appeared on the path ahead of me with his ubiquitous grin. "Maybe rope?" he suggested innocently. This time I wasn't arguing.



*Hilary enjoys a rare downhill moment. (DP)*

We slogged up the hill, now at a more evenly matched pace, taking it in turns to break trail. Progress was steady but exceedingly slow. Eventually we passed the place Beardy, Rich, Gavin and I had camped on our very first expedition to these mountains four years ago; we were a mere 4km from the roadhead, but it would soon be getting dark. I knew that there was a small village 500m further up the valley, so we kept our heads down and headed for that. Around 7.15pm we arrived, and set about settling into one of the farmers' 'summer residences': small wooden huts that the local Tibetan yak farmers lived in for six months during the summer, but that were now deserted for the winter. We pitched our 4-man tent on the fireplace at the back of the hut, fixed ourselves some Mountain House Freeze Dried Special and passed out for the night.

The next day dawned bright and overcast, and we were up around 8am. We were close to cave country, but not close enough; the plan was to move camp another 200m higher and 1km to the southwest. Between us and it however was a slope far too steep to contemplate; we would have to go around to the north.



*Dima 'GPS-ing' the camp location. (AO)*

International expeditions can be difficult, and this one was, for me at least, no exception. I couldn't have asked for a better team, I was well aware of this and the fact would remain foremost in my mind, but still I had some minor

points of frustration. For one thing, I was struggling with the fact that my normal leadership style relied on a high degree of reading the ongoing psychology of the expedition members from the off-the-cuff banter that went on on the trail, while making dinner, while sitting round the fire, and that on this expedition all of this was impossible: most of the chitchat was in Russian, and I couldn't tell the difference between off-the-cuff banter, bitching about expedition and intellectual discussions of ex-USSR politics. Of course I could (and



*Artem and Peter resting at camp. (DP)*

did) ask straight out what mood people were in and what direction they thought the expedition should take next, but this was a very poor substitute for intuition; you're not well placed to influence people if all you have to go on is the occasional snippet that they choose to tell you about what's going on in their heads. On top of that, I was getting a bit pissed off with the low degree to which the others could understand *me*: I was used to caving with people I had known for years or, at least, who would quickly pick up on where I was coming from thanks to a common language; on this expedition I felt like an alien, more similar to my fellow expedition members than I thought they knew, but unable to communicate that across the language barrier and across a subtle but subtly infuriating insistence that Russians seemed to have on regarding Women as somehow Different. Also, frankly, I was used to caving with people at least some of whom firmly held as high an opinion of me as I did of them and who made that obvious to me, and now I was among relative strangers; it was clear that they all had high opinions of each other, but I didn't really know what they thought of me, and I realised I was missing that secure feeling.

Half an hour uphill we stopped at another hut for a route-finding discussion. In my mind it was obvious where we needed to go: north. The others, however, apparently thought that heading straight west was OK, and they were faster than me; before I had managed to explain my point or get any of them to translate their discussion into English, Peter was off up the hill breaking a trail up an increasingly steep slope to the west. This was bad, it was bad and it was going to get worse, I thought, heading off after them as fast as I could.



*Hilary and Artem at camp. (DP)*

I caught up with Dima and Artem at the next hut. "Very steep section ahead, do you remember, we walked down this way from first camp in no snow, look, map, to avoid this steep section, it is necessary to go to the *right*, do you see, do you understand", I tried to explain between breaths. Artem said that

he understood, but not that he agreed, and Dima said nothing and anyway Peter was still up ahead breaking trail. I didn't know why he was going the way he was going; when I found him (coming back the other way to collect his rucksack — today, with the higher altitude and increased fatigue, it was too difficult for any of us except Dima efficiently to break trail and to carry a bag at the same time), he just said that he'd come to a junction and that at this junction we shouldn't go to the right because the village was to the left. He'd shown *relatively* little interest in the map so far on the expedition, so my only guess from this comment was that maybe he was suffering from 'GPS overreliance syndrome': don't look too closely at the details of the map, let the GPS tell you the distance and bearing to your desired destination and blindly head on that bearing, come what obstacles may?? This would surprise, indeed astonish me, but in the absence of any actual understanding of what the hell was going on, I guessed I had to consider all possibilities.

I was 99.9% sure that I was right about the route, so I decided this was an occasion for the 'just trust me' strategy. It was my turn to break trail next; I followed Peter's tracks to the junction, dropped my bag and headed to the right, tracing a route along a flat shelf below the steep hill I wanted to avoid. When I got to a place from which I thought it was safe to bear left, I turned to retrace, letting Dima take the lead. I got back to my bag to find Artem and Peter standing at the junction and visibly pissed off at the route I had taken.

'It's very not good for winter expedition', said Artem with folded arms. What's not good, I thought defensively, if you mean ploughing ahead with a course of action without consultation of the full team, then our problem arises precisely because I'm not the only one guilty of that. Shouting back, however, was clearly not going to help matters, so I decided to have another go at explaining my logic on the map. This seemed to pacify them a little, but meanwhile I was having a more disturbing



*Artem and Peter arriving at our camp on the edge of the plateau. (DP)*

sensation: while I had been skiing back down to my bag the mist had cleared, I had had a good view of the left route and it didn't look nearly as bad as I'd thought, I didn't know why not but maybe ... I switched on the GPS while we were poring over the map, took another fix, converted it to map coordinates and made another check on our location on the map.

Oh shit, I was wrong. I didn't know what had been up with my previous mapreading, but it was clear from the numbers on the screen in front of me now that we weren't where I'd thought we'd been. We were 200m further on, and we had already passed the slope of death that I'd been so anxious to avoid; going left from here would be absolutely fine. Presumably, the others had known this all along and had just not understood what I was stressing about, but there wasn't much point in asking whether they had or not. 'I need to say something different now, I am sorry, I make a mistake, I check GPS again, I have wrong

place on map, you are right, we should fetch Dima and then go left', I said. Peter headed off to fetch Dima while Artem and I waited at the junction. I made an abortive, far too aggressive attempt to explain some of the contents of my head to a captive Artem. "I like mountain ski," he said irrelevantly, and went to play in the snow 20m away. I felt like a prick; all in all, not the best way to go about raising your fellow expedition members' opinion of you, I mused. Oh well, on with it; I trusted cavers to be cavers.

The next day we were off to "C3-408", a.k.a. Dima's cave. I had high hopes for this one. Dima had found it a couple of weeks earlier, on the first camp of expedition — a 10cm diameter draughting hole at the bottom of a small shakehole. After 5 minutes of rock removal it had become a 70cm diameter draughting hole, and we could see down a pitch, belling out into blackness, with rocks rapidly falling for several seconds. At that time we'd had no rope with us, so we'd just logged the prospect and vowed to return. A draught, man, a draught ... "I think this cave, minimum two thousand metres depth", announced Dima with a sly grin, and much to my delight.



*Leaving our plateau camp for Dima's cave. (DP)*

Peter and Artem rigged the top of the first pitch while Dima changed into caving kit and I twiddled my thumbs with mounting impatience. "Please go", I told the cave. Dima disappeared underground, emerging an indeterminate length of time later to report that at the bottom of the first pitch was a blockage, but he thought that digging here might be successful. This was a hopeful sign, since, on the previous dig of expedition, Dima had been the first to wash his hands of the project, so I knew he wasn't some kind of crazy mole, with limitless enthusiasm for any dig no matter how hopeless. I was disappointed that we weren't already into open passage with a free-hang down to -500m, but things could be worse.

Dima would need a digging partner; it could only be one partner as we only had two sets of caving kit between us, but it was somewhat arbitrary who joined him. "Do you want to go?" I asked Artem and Peter with a hope that was, apparently, too thinly disguised. Personally, I was absolutely gagging to get underground, in general (as always) but in Zhongdian and this cave in particular; however, one of the trials of being expedition leader was that it tended to make me care about the longterm future of the project more than my immediate speleological gratification. On this occasion I felt that the most important thing was to get these guys interested in the project so that there might be future Zhongdian expeditions, and that the way to get them interested was to get them underground in as many remotely interesting caves as possible.

"Do you?" replied Artem. This was too much for me. "Of course," I laughed. "You may go," said Peter. I didn't wait to hear any more, if there was any more;

I threw on the plastic Chinese overalls, Peter's size 9 walking boots and someone else's helmet and SRT kit, and dropped into the blackness.

20m down I found Dima shifting rocks up towards me through a small floor-level hole. I set about throwing them to the opposite end of the chamber, so that he had space to pass up more. Soon we had made enough progress that we were both needed below the hole, and I climbed down to join him. Man, this was a good draught. My mind flitted between memories of draughting digs in the UK that had taken weeks, years even to 'go', and digs in Gavin's Dong just across the plateau, that had taken a mere half hour. Which was it to be?

After an hour's digging the passage had become very steep, perhaps 30 degrees to the vertical, and it was full of rocks; we could still see plenty of black space, but progress had slowed significantly. Dima had decided that the dig was a project only for a large expedition with plenty of spare time and people on its hands; I thought this was an exaggeration, but I agreed that it didn't seem that another hour or 2 was likely to do the trick. Damn. We reluctantly exited the cave, relayed our news, and changed back into skiing gear while the others derigged.



*Artem and Peter derig C3-408. (DP)*

The next day was our last on the mountain. There really wasn't much else we could do through this much recent snow: it was taking us twice as much time and three times as much energy to get anywhere as it would have in summer conditions, everything within feasible distance that had been found had more-or-less been explored, everything that hadn't yet been found was buried.

We decided to head for Subvertical Pot. Explored to 113m depth by the Yunnan 2004 expedition, Subvertical Pot was our second deepest cave of the area, after the 130m deep Dawa Dong, and Peter was particularly keen to see the area's Real Caves with his own eyes. I also wanted him to, partly because Yunnan 2004 had left some windows through to possible parallel shafts unexplored and I wanted him to have a go at extending the cave, and partly because I wanted him to see the area's Real Caves with his own eyes.



*Peter prussiking out of Subvertical Pot.  
(AO)*

After some cave-identification hassles, we eventually found Subvertical, and set about getting cavers underground. I dug out a half-buried rhododendron bush while Artem made a snow belay, and we rigged the top Y-hang while Dima and Peter changed into their caving kit. Then Artem and I huddled under the storm shelter, drinking tea, eating dried fruit and talking about the Russian mafia while Dima and Peter

disappeared underground.

Some four hours later they emerged; they had used all the rope and explored two parallel shafts and numerous windows in the walls, finding terminal digs at the bottom of each shaft. 'We checked every hole small enough to fit human through except in ceiling,' Peter reported. 'I think this cave, 131m deep now,'<sup>1</sup> Dima grinned. Not too bad a note to end an expedition on.



*Sunrise behind the Milk River Guesthouse, Zhongdian. (AO)*

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<sup>1</sup>It later became clear that this statement was, unfortunately, incorrect: Dima and Peter had explored a shaft of about 90m depth that was not on the 2004 survey, guessed that that was the 113m deep shaft on the survey, and then found another which was 20m deeper, and which was in fact the one surveyed in 2004.

## 7 Summary of accounts

All figures are in UK pounds.

### Income

Grant income		
The Alpine Ski Club	300	
The China Caves Project	300	
Lyon Equipment (sponsorship in kind)	870	
The Mount Everest Foundation	250	
Subtotal	<hr/>	1720
Expedition members' contributions		6694
TOTAL		<hr/> 8414

### Expenditure

Expenditure before and after expedition		
International flights	2100	
Domestic flights	600	
Visas	100	
Camping equipment	600	
Skiing equipment	1800	
Winter mountaineering equipment	1000	
Clothing	400	
Food (freeze-dried)	200	
Photography	50	
Training trip	1000	
Report	30	
Misc	70	
Subtotal	<hr/>	7950
Expenditure during expedition		
Accommodation	102	
Transport	99	
Food	200	
Shipping	14	
Misc	49	
Subtotal	<hr/>	464
TOTAL		<hr/> 8414

## 8 Thanks

The expedition would like to thank the individuals and institutions whose generous support helped to keep the expedition just-about affordable: the Alpine Ski Club, the China Caves Project and the Mount Everest Foundation, for direct financial support; Lyon Equipment, for sponsorship in kind; and Mountain Spirit, for generous discounts and equipment advice.

Thanks also to Steve Roberts, for being our Home Agent; to Daisy and the owners of Zhongdian's Milk River Guesthouse, for their hospitality, help and friendship; and to Liu Hong of Yunnan University Department of Geography, for

his continued support of our work in Zhongdian, invaluable advice and excellent company.

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