

## TITLE

CAMP\_Himalayas\_Syangboche\_20021001\_20030331.stm

## DATASET CONTACT

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## DATE OF THIS DOCUMENT

15 January 2004

## 1. 0 DATASET OVERVIEW

### 1.1 Introduction

Intensive meteorological observations in the Khumbu Valley, Nepal Himalayas, have been conducted since the middle 90's (Ueno et al., 1996; Bertolani et al., 2000; Ueno et al., 2001; Bollasina et al., 2002; Ueno and Pokhrel, 2002) in order to provide long-term monitoring of the monsoon at high altitude. This area, being located on the windward side of the Range with respect to the Indian monsoon, is well exposed to the summer winds. The studies conducted have demonstrated that the region is a significant point of observation both of local climate and large-scale circulation. The Syangboche AWS was established on October 21, 1994, at Syangboche village, Solu-Khumbu district, at an altitude of 3833 m a.s.l., with the cooperation between His Majesty's Government, Department of Hydrology and Meteorology (Nepal) and the Glaciological Expedition in Nepal Project (Japan), and has been kept as one of the GAME/AAN project AWS network. The AWS provides data for basin scale scientific process studies of meteorology, hydrology, glaciology and engineering disaster prevention, and also contributes to monitor 10 years scale climate change as representative station at mid-latitude alpine region.

### 1.2 Time period covered by the data

Start: 1 October 2002, 00:00  
End: 31 March 2003, 23:40

### 1.3 Temporal characteristics of the data

All parameters are recoded every 20 minutes. This data set includes soil temperature at 5 and 15 cm depths.

The soil moisture is entirely missing.

### 1.4 Physical location of the measurement

Latitude: 27° 48' 36" N  
Longitude: 86° 43' 12" E  
Elevation: 3833 m a.s.l.

### 1.5 Data source

Original data provided by the GAME/AAN Committee.

### 1.6 WWW address references

<http://www.suiri.tsukuba.ac.jp/Project/aan/aan.html>

## 2.0 INSTRUMENTATION DESCRIPTION

### 2.1 Platform

Aanderaa AWS. The 15 cm sensor is not mounted, and the 0.5 cm sensor is fixed with iron pin.

### 2.2 Description of the instrumentation

Parameter	Model	Manufacturer
Soil Temperature	30022A	Aandera (Norway)

### 2.3 Instrumentation specification

Parameter	Sensor Type	Depth of sensor (cm)	Accuracy
Resolution			
Soil Temperature	Platinum resistor -5.0; -15.0	0.1°C	0.1°C

## 3.0 DATA COLLECTION AND PROCESSING

### 3.1 Description of data collection

Original N-value data are saved in the Data Storage Unit (DSU). DSU is collected from the AWS twice every year, in spring and autumn.

### 3.2 Description of derived parameters and processing techniques used

The N-value is converted to a meteorological value by using experimental coefficients

defined for each sensor. Soil temperature data are instantaneous values.

### 3.3 Data format

These data are in the CEOP EOP-3 data format agreed to by the CEOP Scientific Steering Committee. This format is described in detail as part of the CEOP Reference Site Data Set Procedures Report which is available at the following URL:

[http://www.joss.ucar.edu/ghp/ceopdm/refdata\\_report/ceop\\_soils\\_format.html](http://www.joss.ucar.edu/ghp/ceopdm/refdata_report/ceop_soils_format.html)

### 4.0 QUALITY CONTROL PROCEDURES

The quality control flags follow the CEOP data flag definition document.

#### 4.2 UCAR/JOSS Quality Control Procedures

UCAR/JOSS conducted two primary quality assurance/control procedures on the reference

site data. First the data has been evaluated by a detailed QA algorithm that verifies the format is correct, examines any QC flags, and conducts basic checks on data values. Second, JOSS conducts a manual inspection of time series plots of each parameter.

### 5.0 GAP FILLING PROCEDURES

No gap filling procedure was applied.

### 6.0 DATA REMARKS

#### 6.1 PI's assessment of the data

##### 6.1.1 Instruments problems

Sensor at 0.5 cm is mounted in the vegetated soil, and not exactly at 0.5 cm below the surface. Vegetation changes height (1-10cm) depending on the season.

##### 6.1.2 Quality issues

None.

#### 6.2 Missing data periods

None.

### 7.0 REFERENCE REQUIREMENTS

The data was collected under the GEWEX/GAME project funded by Ministry of Education, Science, Sports and Culture and Asian Pacific Network, and special research foundation of the University of Shiga prefecture.

## 8.0 REFERENCES

Ueno K., and A. P. Pokhrel, 2002: Intra-seasonal air temperature variation in the Nepal Himalayas, *Mausam*, 53, 281-288.

Bollasina, M., L. Bertolani, and G. Tartari, 2002: Meteorological observations in the Khumbu Valley, Nepal Himalayas, 1994-1999, *Bull. Glac. Res.*, 19, 1-11.

Ueno K., R. B. Kayastha, M. R. Chitrakar, O. R. Bajracharya, A. P. Pokhrel, H. Fujinami, T. Kadota, H. Iida, D. P. Manandhar, M. Hattori, T. Yasunari, and M. Nakawo, 2001: Meteorological observations during 1994-2000 at the Automatic Weather Station (GEN-AWS) in Khumbu region, Nepal Himalayas, *Bull. Glac. Res.*, 18, 23-30.

Bertolani, L., M. Bollasina, and G. Tartari, 2000: Recent biennial variability of meteorological features in the Eastern Highland Himalayas, *Geophys. Res. Lett.*, 17, 2185-2188.

Ueno K., H. Iida, H. Yabuki, K. Seko, A. Sakai, G. S. Lhakupa, R. B. Kayastha, A. P. Pokhrel, M. L. Shrestha, T. Yasunari, and M. Nakawo, 1996: Establishment of the GEN Automatic Weather Station (AWS) in Khumbu region, Nepal Himalayas, *Bull. Glac. Res.*, 14, 13-22.

## TITLE

CAMP\_Himalayas\_Syangboche\_20030401\_20030930.stm

## DATASET CONTACT

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## DATE OF THIS DOCUMENT

24 January 2005

## 1. 0 DATASET OVERVIEW

### 1.1 Introduction

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### 1.2 Time period covered by the data

Start: 1 April 2003, 00:00  
End: 30 September 2003, 23:40

### 1.3 Temporal characteristics of the data

All parameters are recoded every 20 minutes.

#### 1.4 Physical location of the measurement

Latitude: 27° 48' 36" N  
Longitude: 86° 43' 12" E  
Elevation: 3833 m a.s.l.

#### 1.5 Data source

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## 4.0 QUALITY CONTROL PROCEDURES

The quality control flags follow the CEOP data flag definition document.

## 5.0 GAP FILLING PROCEDURES

No gap filling procedure was applied.

## 6.0 DATA REMARKS

### 6.1 PI's assessment of the data

#### 6.1.1 Instruments problems

Sensor at 0.5 cm is mounted in the vegetated soil, and not exactly at 0.5 cm below the surface. Vegetation changes height (1-10cm) depending on the season.

#### 6.1.2 Quality issues

None.

### 6.2 Missing data periods

All data are missing from July 05, 2003, 11:20 to August 12, 2003, 05:40

## 7.0 REFERENCE REQUIREMENTS

The data was collected under the GEWEX/GAME project funded by Ministry of Education, Science, Sports and Culture and Asian Pacific Network, and special research foundation of the University of Shiga prefecture.

## 8.0 REFERENCES

Ueno K., and A. P. Pokhrel, 2002: Intra-seasonal air temperature variation in the Nepal Himalayas, *Mausam*, **53**, 281-288.

Bollasina, M., L. Bertolani, and G. Tartari, 2002: Meteorological observations in the Khumbu Valley, Nepal Himalayas, 1994-1999, *Bull. Glac. Res.*, **19**, 1-11.

Ueno K., R. B. Kayastha, M. R. Chitrakar, O. R. Bajracharya, A. P. Pokhrel, H. Fujinami, T. Kadota, H. Iida, D. P. Manandhar, M. Hattori, T. Yasunari, and M. Nakawo, 2001: Meteorological observations during 1994-2000 at the Automatic Weather Station (GEN-AWS) in Khumbu region, Nepal Himalayas, *Bull. Glac. Res.*, **18**, 23-30.

Bertolani, L., M. Bollasina, and G. Tartari, 2000: Recent biennial variability of meteorological features in the Eastern Highland Himalayas, *Geophys. Res. Lett.*, **17**, 2185-2188.

Ueno K., H. Iida, H. Yabuki, K. Seko, A. Sakai, G. S. Lhakupa, R. B. Kayastha, A. P. Pokhrel, M. L. Shrestha, T. Yasunari, and M. Nakawo, 1996: Establishment of the GEN

Automatic Weather Station (AWS) in Khumbu region, Nepal Himalayas, *Bull. Glac. Res.*, **14**, 13-22.