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Session 3

GRUAN Site Report for Xilinhot

(Submitted by Luo,Hao Wen)

Summary and Purpose of this Document

Report from the GRUAN site Xilinhot for the period January 2024 to December 2024.

Overview

Xilinhot was accepted as a GRUAN candidate site in October 2008. In March 2023, Xilinhot be gan on GRUAN observation with the operational data on GTH3 radiosonde (Twice a day), RS41 radiosonde (Twice a week) and CYT-1 ECC ozonesonde (Once a week). All GTH3, RS41 and CYT-1 ECC ozonesonde launches is perform in accordance with GRUAN op-erational procedures,

1. RS41 radiosonde data streams to the GRUAN LC is operational since October 2024.Twice weekly soundings of RS41 are contained in the data flow. All soundings are submitted using RsLaunchClient. The total is 110 in the period January 2024 to December 2024.
2. GTH3 radiosonde data streams is in the process of establishment.
3. GNSS-PW data streams is under the Co-chairs TT-Sites and CMAs in the process of establishment.

Change and change management

From March 2023 to November 8, 2024, XIL Site has been using the SPS-311 receiver (Serial No.B45102, produced in 2006). The accompanying computer has problems such as time lag, and time correction of the measurement data is required. After replacing it with the SPS311G receiver of Vaisala's new DigiCORA radiosonde system MW41, the problem of time lag no longer occurred. The position of the ball release station and the antenna height of the receiver were also changed. The corresponding parameters on the RSLaunch software were updated in a timely manner, and strict change management was carried out.

Resourcing

The situation at Xilinhot is positive, having stable financial and personnel resources to perform and sustain routine and scheduled launches.

Operations

1. According to 110 sets of RS41 radiosonde data from Xilinhot Site, only 15 sets of data did not reach 10 hPa, and the success rate of 10 hPa lift-off was 90%. This is because, in addition to the con-ventional 1600g weather balloons, we also released 26 sets of 3000g weather balloons

from June to December. These balloons were of experimental nature. It has not been routinely applied in upper-air operations. At the time of 00UTC on September 3, 2024, we obtained the RS41 radiosonde data at an altitude of 47,560 meters, corresponding to a pressure of 1.07 hPa.

2. There are no safety-related issues with balloon launches and/or landings and environment-related issues regarding balloon/rigs landing in remote or populated areas at present. ,which it can be presented in posters at ICM-16.

3. Currently, there are no issues regarding the application of the R23 cryogen for frostpoint hygrome-ter(CFH) soundings either. Our plan is to conduct one group of CFH tests each on the day and night every quarter, and the relevant situation will be reported at ICM-16.

4. There may be some operational oversasses and doubts in GroundCheck: GC-RI41 and GC-SHC. https://panel.gruan.info/app_site_reports: GC-RI41 in Ground check results in 3.3 Stream RS41 of Xilinhot Radiosonde Launch Site (XIL-RS-01) The deviation of temperature and relative-humidity difference (sonde-ref) of GC-SHC is a bit too large. Is this the same as when we uploaded RS41 through the RsLaunchClient? In the 100%SHC test, the GC-SHC ref section was filled with a fixed value (temperature of 23 and a humidity of 100%RH), which led to a relatively large deviation be-tween these two values of ref and those of the radiosonde. Do we need to correct them again to ref(the temperature and humidity data of the Rotronic HP32-HC2A probe)?

Site assessment and certification

The status of site certification was updated on the GRUAN website in June 2025, and it is expected to obtain the site certification certificate at the ICM-16 in November 2025.

GRUAN-related research

1. The member of WMO ET UAM Guo Qiyun, mainly undertakes the GTH3 GDP progression in GA3 which has been included in ICM-15 (GCOS-262). Meanwhile, Luo Haowen is currently a mem-ber TT Sites and hopes to establish Ozonesonde data flow of Xilinhot site. The two people hope to join in TT Radiosondes. Luo Haowen hope to transfer the responsibility of the Xilinhot site contact person to Li Huirong. Liang Hong is establishing the GNSS-PW data flow of Xilinhot site and hopes to join TT GNSS-PW.

2. The peer-reviewed manuscript of the current GTH3GDP ¡Comparison GRUAN data products for HuaYunTianYi GTH3 and Vaisala RS41 radiosondes at Xilinhot,China ¿ already subited the

Journal of Atmospheric and Oceanic Technology. Status:Required Reviews Complete.

WG-GRUAN interface

1. After Xilinhot site certification, the data distribution scheme should elevate the permissions from EDT(netCDF) and GDP(netCDF) to obtain Converted Raw(netCDF) and Intermediate Raw(netCDF).
2. Could WG-GRUAN support Xilinhot site to host ICM-17 or ICM-18 or carry out the Upper Air Instrument Intercomparison Campaign of WIGOS RA II?

Other archiving centers

NIL

Participation in campaigns

1. The total number is 110, which is dual sounding of Vaisala RS41 radiosonde and Huayuntianyi GTH3 radiosonde.
2. The total number is 4, which is intercomparison campaign of En-sci CFH, Vaisala RS41 radiosonde and Huayuntianyi GTH3 radiosonde.

Future plans

1. Establish the GNSS-PW and GTH3 data stream;
2. Continue to launch 4 type radiosonde campaigns. Including: CY-1 ozonesonde, and En-sci CFH, Vaisala RS41 radiosonde and Huayuntianyi GTH3 radiosonde.

GRUAN Site Report for Xilinhot (XIL), 2024

Reported time range is Jan 2024 to Dec 2024
Created by the Lead Centre
Version from 2025-11-07

1 General GRUAN site information

Object	Value
Station name	Xilinhot
Unique GRUAN ID	XIL
Geographical position	43.9500 °N, 116.1200 °E, 1013.0 m
Operated by	IMWB | Inner Mongolia Weather Bureau
Main contact	Luo, Hao Wen
WMO no./name	54102 XILINHOT
Operators	currently 0, changes +0 / -0
Sounding Site	1
GNSS	1

1.1 General information about GRUAN measurement systems

System	Name	Type	Setups	Measurements
XIL-GN-01	GNSS Site XLHT	GNSS	0	not operational
XIL-RS-01	Xilinhot Radiosonde Launch Site	Sounding Site	1	110

1.2 General comments from Lead Centre

No comments from Lead Centre.

2 System: GNSS Site XLHT (XIL-GN-01)

Object	Value
System name	GNSS Site XLHT
Unique GRUAN ID	XIL-GN-01
System type	GNSS (GN - GNSS)
Geographical position	43.9500 °N, 116.1100 °E, 993.0 m
Operated by	IMWB | Inner Mongolia Weather Bureau
Instrument contact	Luo, Hao Wen
Started at	-
Defined setups	-
Possible streams	-

2.1 Lead Centre comments

2.1.1 Dataflow

No GNSS dataflow to LC has been established yet.

3 System: Xilinhot Radiosonde Launch Site (XIL-RS-01)

Object	Value
System name	Xilinhot Radiosonde Launch Site
Unique GRUAN ID	XIL-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	43.9500 °N, 116.1100 °E, 1005.4 m
Operated by	IMWB | Inner Mongolia Weather Bureau
Instrument contact	Luo, Hao Wen
Started at	-
Defined setups	1 (DUAL)
Possible streams	RS41

3.1 Lead Centre comments

3.1.1 Dataflow

Sonde dataflow to the GRUAN LC is operational since October 2024.

Twice weekly soundings of RS41 are contained in the dataflow. All soundings are submitted using RsLaunchClient.

3.1.2 Data quality

The burst altitudes seem to be unrealistic if they go up to 1 hPa. It should be checked whether there is any issue or if these are real. If so, how is this achieved?

3.1.3 General

There is very good performance in terms of burst altitude which is regularly 5 hPa and higher.

3.2 GRUAN data products

3.2.1 Stream: RS41

Product	Version	Soundings received	Available at LC	Distributed by NCEI
RS41		110	110	
RS41-RAW	001		110	
RS41-EDT	001		110	
RS41-GDP	001		109	

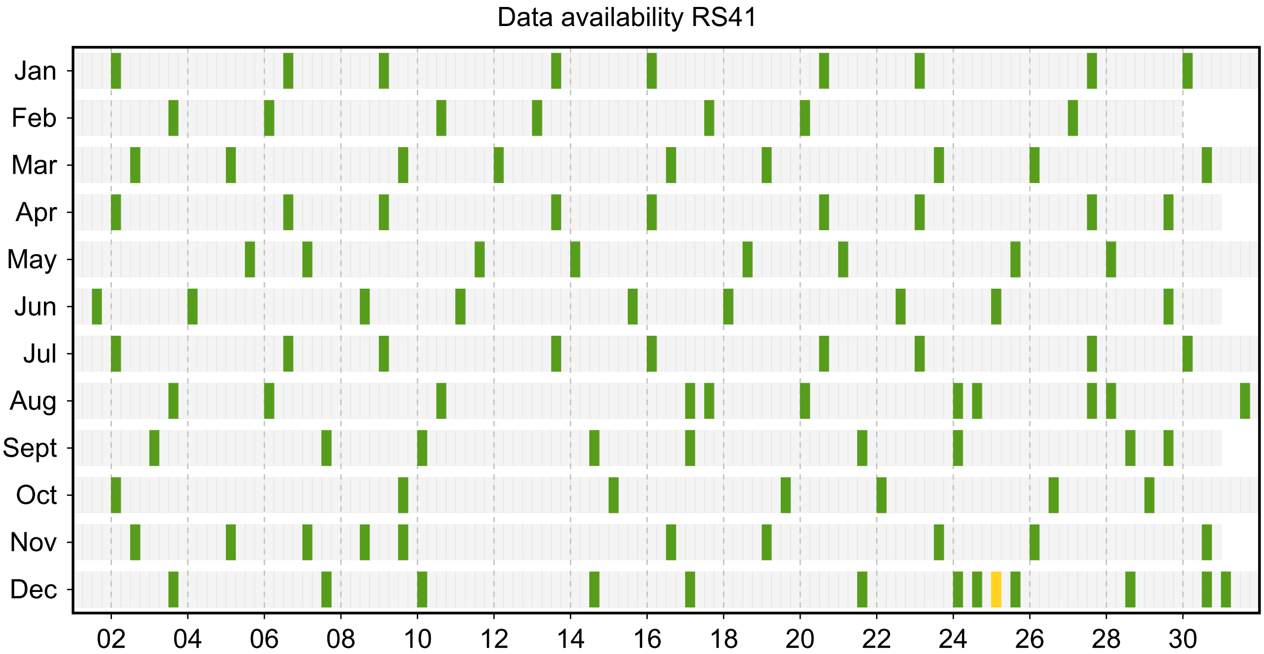
3.3 Availability of data products

Available (green): All steps of data processing have been successfully completed. The data product file is available at LC (e.g. files that didn't pass QA/QC or uncertified GRUAN data products) and/or at NCEI (a certified GRUAN data product file that did pass QA/QC).

Unprocessed (yellow): The manufacturer-produced file with raw measurement data has been successfully converted into a GRUAN-standardized raw data format (NetCDF). The GRUAN data processing has not been performed or was aborted. Reasons for this may be a still missing GRUAN data processor or a processing-software error.

Original (red): The original, manufacturer-produced, raw data file is available (e.g. MWX data file) but was not converted into a GRUAN-standardized raw data format (NetCDF). Reasons for this may be missing data conversion software, a software error, or a corrupt data file.

3.3.1 Stream: RS41



3.4 Instrument combinations of XIL-RS-01

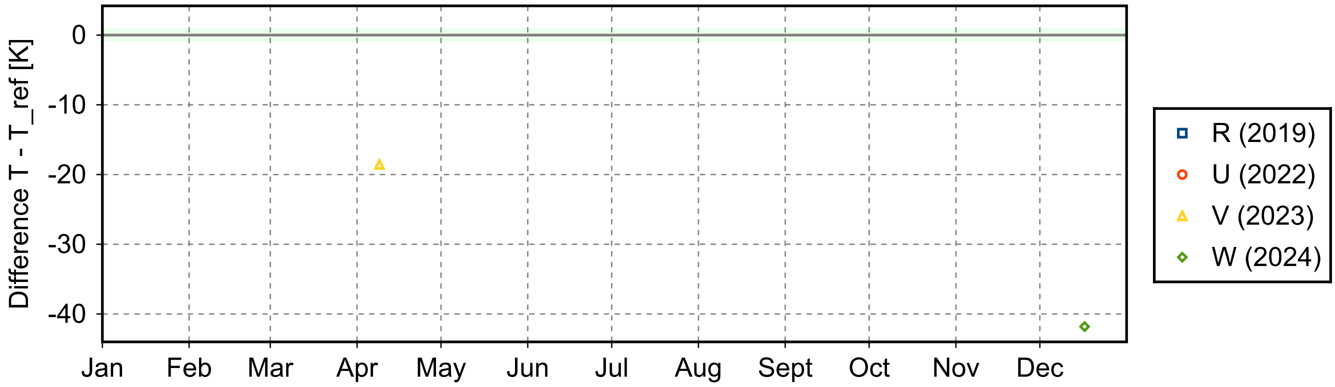
Count	Instrument combination
110	RS41

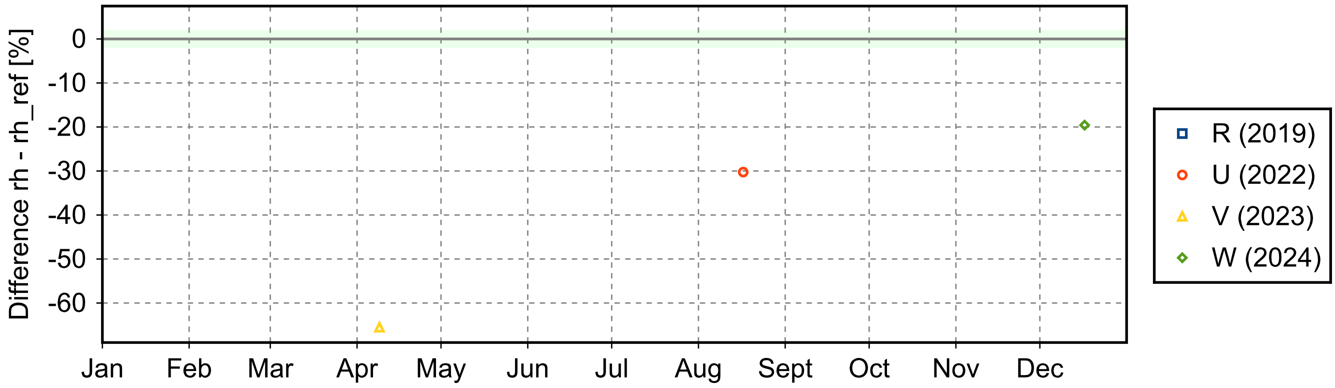
3.5 Instrument ground check

3.5.1 Stream: RS41

(1) GroundCheck: GC-RI41

(2) GroundCheck: GC-SHC





3.6 Measurement events