



WMO/IOC/UNEP/ICSU  
GLOBAL CLIMATE OBSERVING  
SYSTEM (GCOS)

Doc. 1.03  
(15.IX.2020)

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**12th GRUAN Implementation-  
Coordination Meeting (ICM-12)**

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Session 1

Virtual

16 - 20 November 2020

## GRUAN Site Report for Beltsville

*(Submitted by Belay Demoz and Ricardo Sakai)*

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### **Summary and Purpose of this Document**

Report from the GRUAN site Beltsville for the period January to December 2019.

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# GRUAN Site Report for Beltsville (BEL)



Reporting for the period January to December 2019

Date: 15-September-2020

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## Overview

Beltsville is located at Howard University Beltsville Campus. It contributes with weekly RS92-RS41 and a monthly CFH data. The site was certified this year and has made the measurements consistently. The site is currently working on ways to submit the ozone profiles. In addition, Beltsville has been a primary participant in the multi-agency GRUAN group in the mid-Atlantic region called GMAC.

## Change and change management

Beltsville has been launching a dual sonde RS92-RS41 for over two years at HUBC. We have submitted the data to GRUAN LC, NOAA-STAR and have just commenced to do analysis and interpretation of the data. So far we have 16 dual. Further, our collaboration with GMAC and Sterling has allowed similar multi-package flights and will be part of the RS41-RS-92 data analysis in GRUAN.

## Resourcing

Dr. Sakai and Mr. Adrian Flores have been managing the day to day GRUAN activity at Beltsville with Dr. Belay Demoz assisting in planning and coordination of proposal and other operational concerns. We are thankful to Dr. Howard Diamond for the contribution in terms of CFH at the site. However, the cost of running the CFH and personnel is always a challenge and continuation is “one-proposal decline” away. We have operated through most of the COVID-19 duration.

## **Operations**

Following are some of the things that we think and worry about (in no particular order)

- The launch site is still in the HUBC north site, and the presence of a hill in the East still gives problems, principally during the winter, when the winds are stronger. Otherwise, most of the times, we have been successful launching balloons higher or close to 10 hPa.
- Until October 2019, the CFH launches use the IMET-1, a radiosonde that is not certified by GRUAN.
- We believe Beltsville is following GRUAN operating procedures.

## **Site assessment and certification**

Beltsville is certified but is going through a recertification processes as we speak. We have been busy at the site and have not yet submitted what is required but will do so soon.

## **GRUAN-related research**

NIL

## **WG-GRUAN interface**

NIL

## **Other archiving centers**

NIL

## **Participation in campaigns**

We have not had a substantial involvement in campaign work this year. The last one was an OWL-ETS campaign followed by a summer of NOAA funded training for undergraduate students (virtual) and an NSF funded virtual workshop on Boundary layer instrumentation (virtual) that was held for graduate students.

## **Future plans**

There are a number of funded activities planned and GRUAN activities will continue. However, with COVID19 uncertainty, all is still in the open.



# GRUAN Site Report for Beltsville (BEL), 2019

Reported time range is Jan 2019 to Dec 2019

Created by the Lead Centre

Version from 2020-11-05

## 1 General GRUAN site information

Object	Value
Station name	Beltsville
Unique GRUAN ID	BEL
Geographical position	39.0500 °N, -76.8800 °W, 53.0 m
Operated by	HOWARD   Howard University
Main contact	Demoz, Belay
WMO no./name	-
Operators	currently 26, changes +0 / -0
Sounding Site	1
GNSS	1

### 1.1 General information about GRUAN measurement systems

System	Name	Type	Setups	Measurements
BEL-GN-01	GNSS Site DCHU	GNSS	0	not operational
BEL-RS-01	Beltsville Radiosonde Launch Site	Sounding Site	8	63

### 1.2 General comments from Lead Centre

No comments from Lead Centre.

## 2 System: GNSS Site DCHU (BEL-GN-01)

Object	Value
System name	GNSS Site DCHU
Unique GRUAN ID	BEL-GN-01
System type	GNSS (GN - GNSS)
Geographical position	39.0541 °N, -76.8775 °W, 25.3 m
Operated by	HOWARD   Howard University
Instrument contact	Demoz, Belay
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: Beltsville Radiosonde Launch Site (BEL-RS-01)

Object	Value
System name	Beltsville Radiosonde Launch Site
Unique GRUAN ID	BEL-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	39.0520 °N, -76.8775 °W, 52.0 m
Operated by	HOWARD   Howard University
Instrument contact	Demoz, Belay
Started at	-
Defined setups	8 (RESEARCH, ROUTINE, OZONE, ROUTINE2, OZONE2, ROUTINE3, OZONE3, DUAL1)
Possible streams	CFH, ECC, RS41, RS92

#### 3.1 Lead Centre comments

##### 3.1.1 Change management

Regularly twin soundings were performed with Vaisala RS92-SGP and RS41-SG.

##### 3.1.2 Dataflow

Operational dataflow of radiosonde measurement data to the GRUAN LC since August 2014. The dataflow includes radiosoundings with Vaisala RS92-SGP, RS41-SG, Intermet iMET-1, ECC Ozone and CFH. All data are transmitted using the RsLaunchClient.

A regular measurement program for the observation of stratospheric water vapor was performed using CFH.



## 3.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCEI
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### 3.2.1 Stream: CFH

CFH		7	7	
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### 3.2.2 Stream: ECC

ECC		23	23	
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### 3.2.3 Stream: IMET-1

IMET-1		5	5	
IMET-1-RAW	001		4	

### 3.2.4 Stream: RS41

RS41		62	62	
RS41-GCA	001		33	
RS41-RAW	001		62	
RS41-EDT	001		62	
RS41-GDP-ALPHA	001		3	
RS41-GDP-ALPHA	002		47	
RS41-GDP-ALPHA	003		47	
RS41-GDP-ALPHA	004		48	
RS41-GDP-BETA	001		48	

### 3.2.5 Stream: RS92

RS92		49	49	
RS92-GCA	001		38	
RS92-INT	001		49	
RS92-RAW	002		49	
RS92-EDT	001		49	
RS92-GDP	002		41	

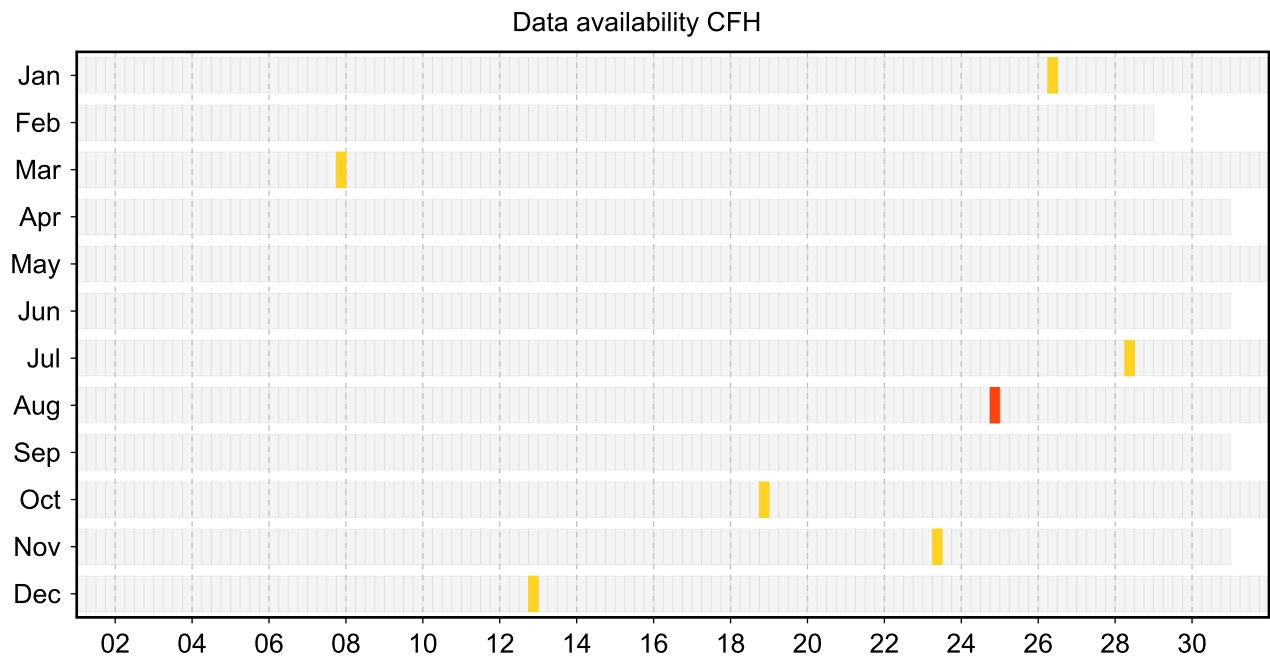
### 3.3 Availability of data products

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).

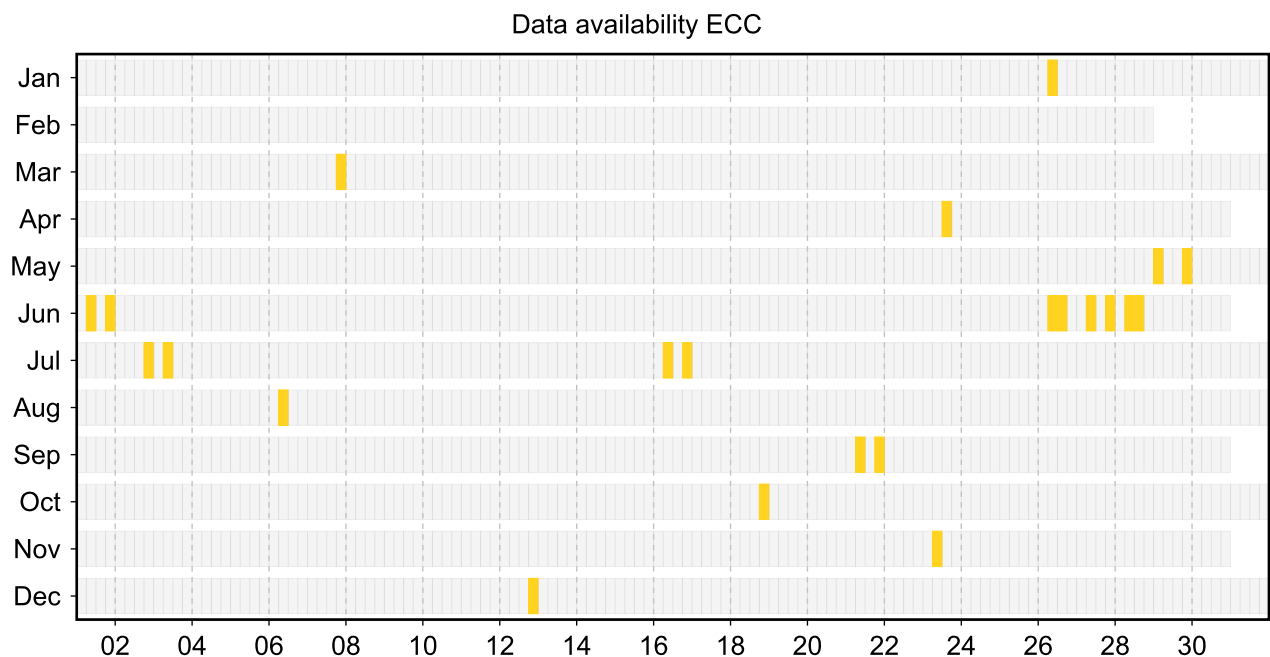
Unprocessed (yellow): The manufacturer-produced file with raw measurement data has been successfully converted into a GRUAN-standardized raw data format (NetCDF). The GRUAN data processing has not been performed or was aborted. Reasons for this may be a still missing GRUAN data processor or a processing-software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

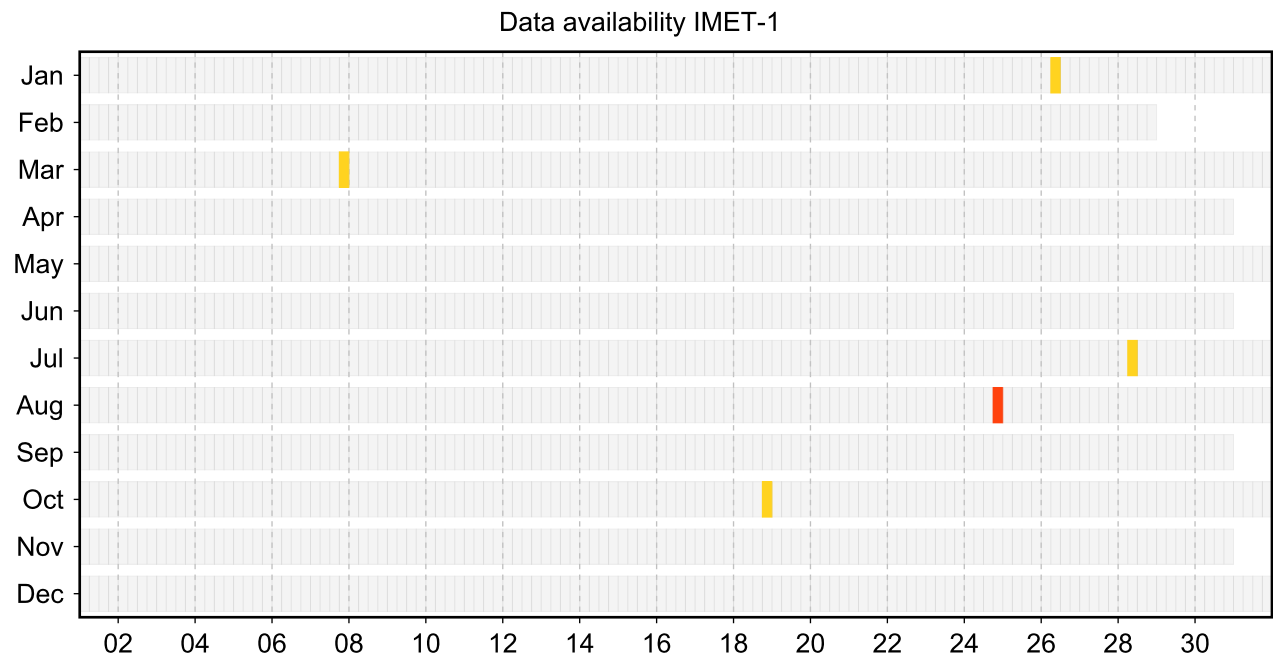
#### 3.3.1 Stream: CFH



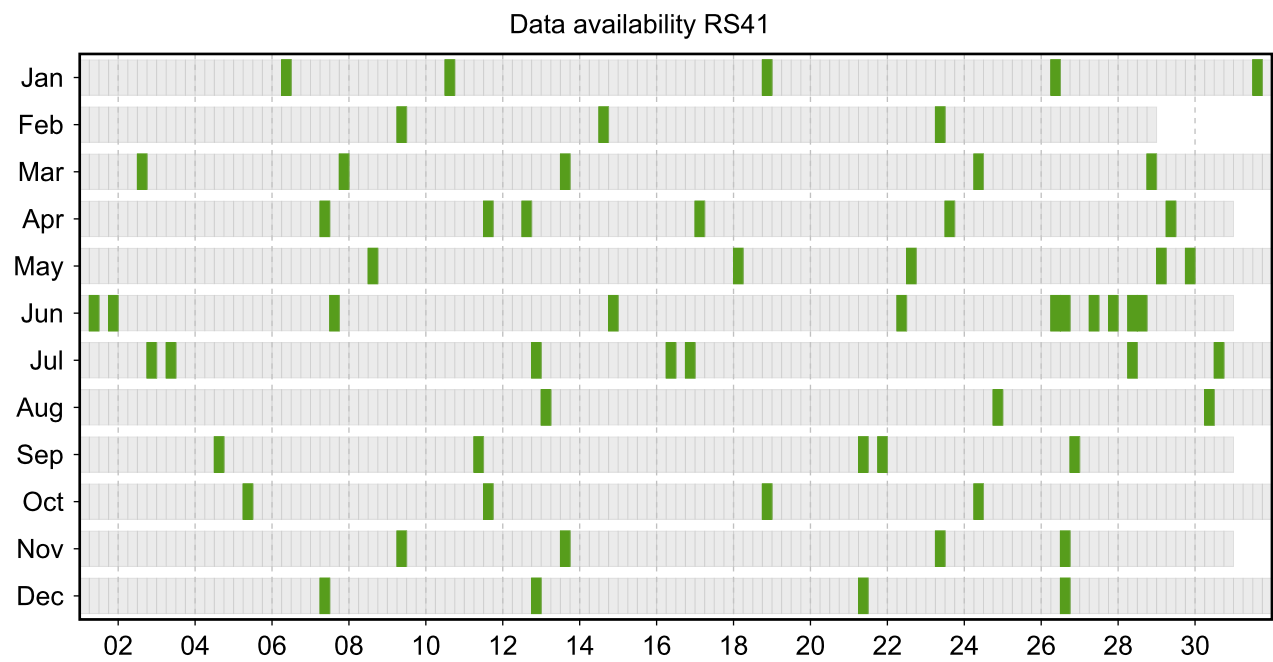
#### 3.3.2 Stream: ECC



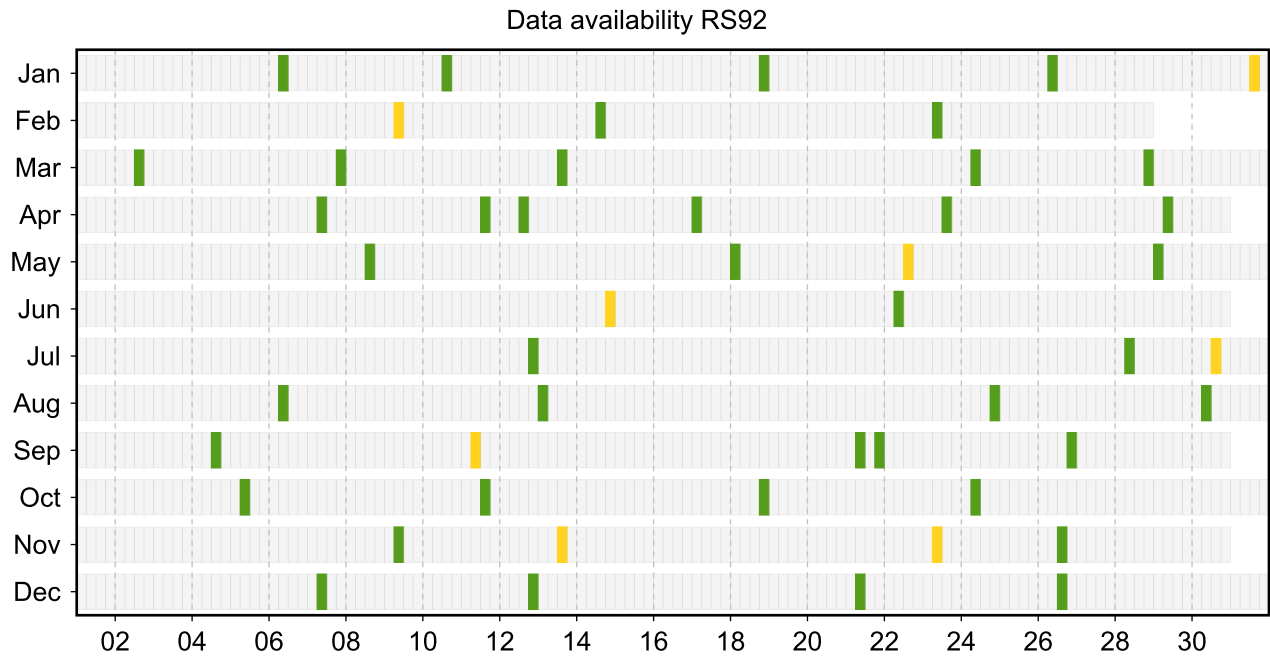
3.3.3 Stream: IMET-1



3.3.4 Stream: RS41



3.3.5 Stream: RS92



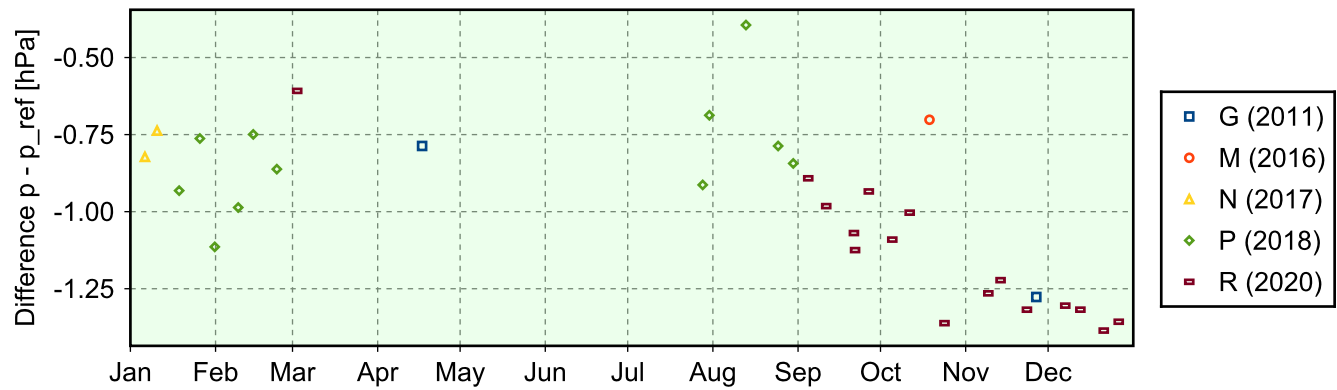
3.4 Instrument combinations of BEL-RS-01

Count	Instrument combination
3	CFH, ECC, IMET-1, RS41, RS92
2	CFH, ECC, RS41, RS92
2	CFH, IMET-1, RS41, RS92
13	ECC, RS41
4	ECC, RS41, RS92
1	ECC, RS92
1	RS41
37	RS41, RS92

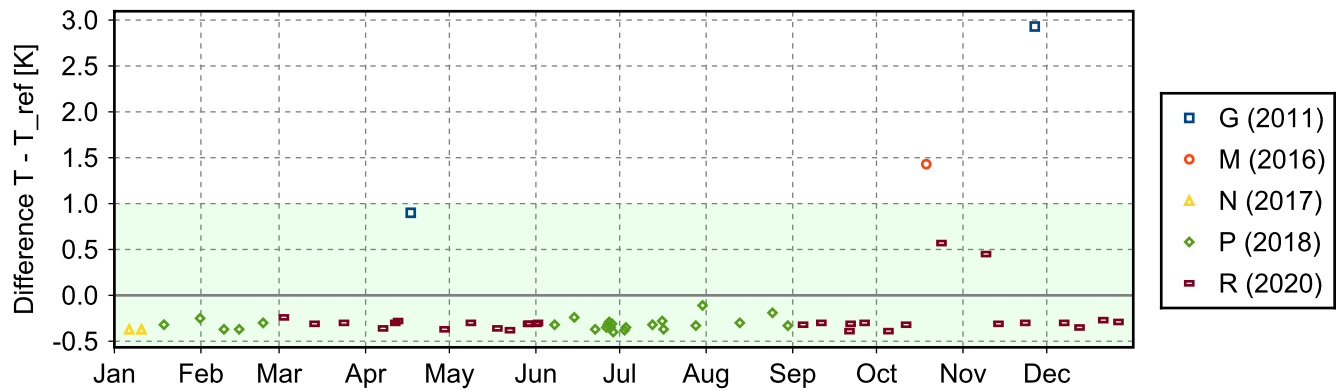
3.5 Instrument ground check

3.5.1 Stream: RS41

(1) GroundCheck: GC-RI41

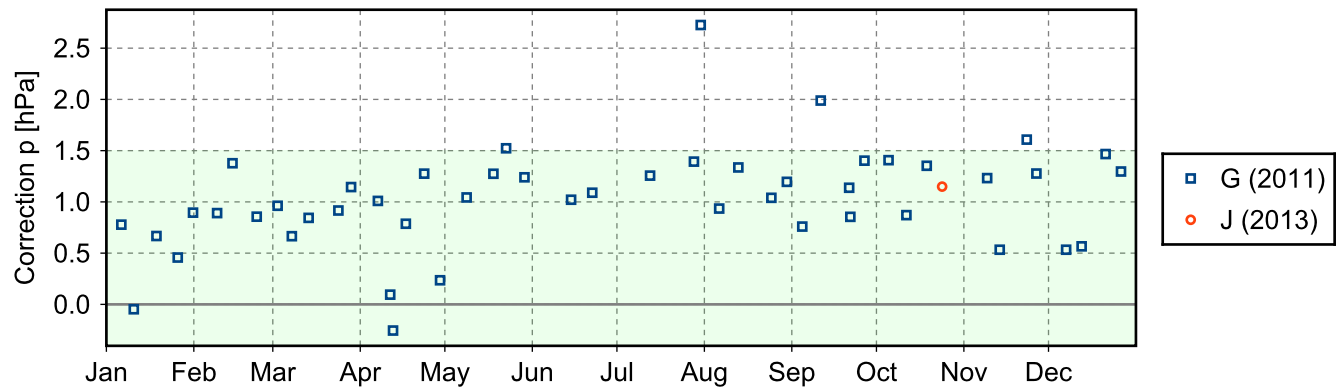


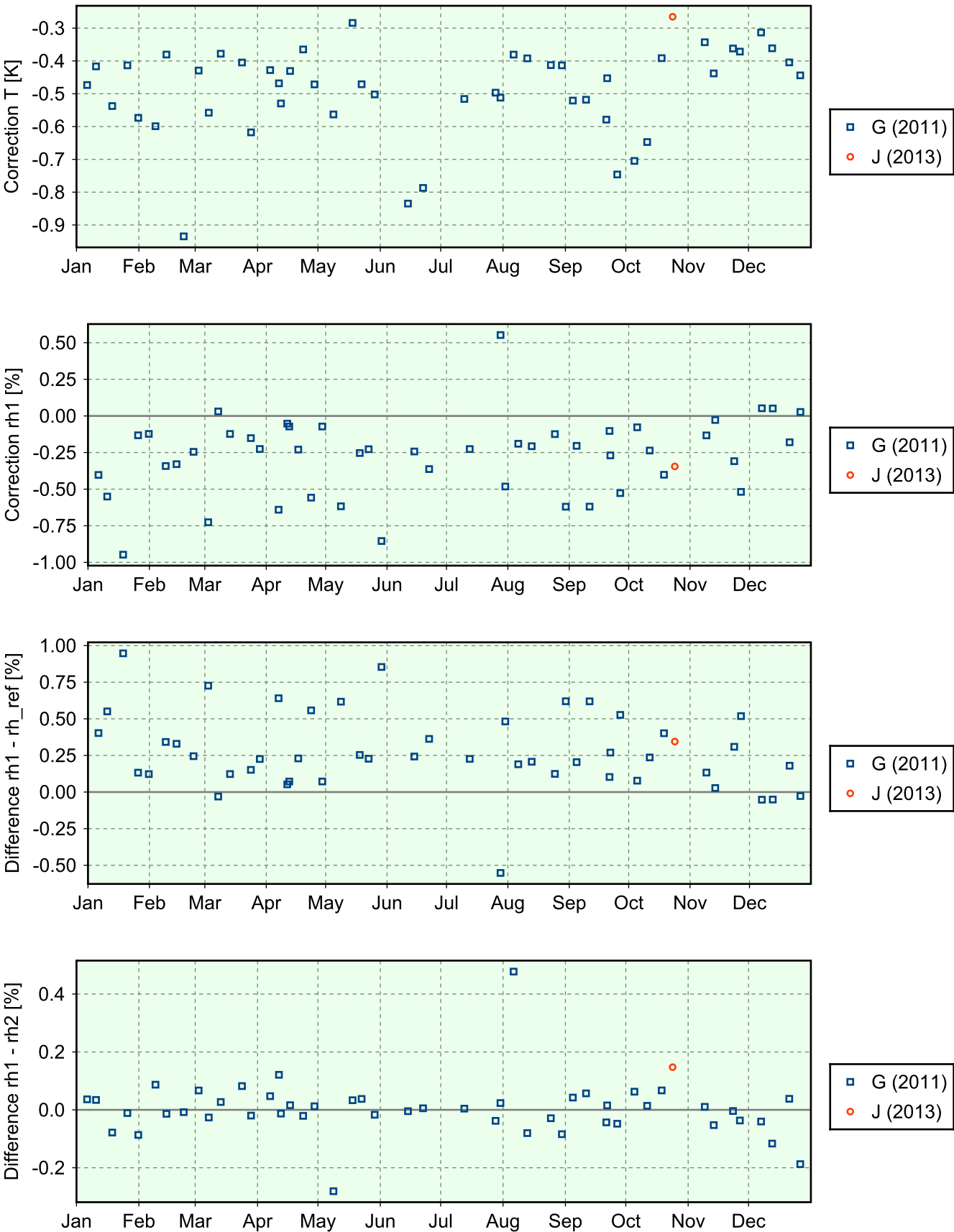
(2) GroundCheck: GC-SHC



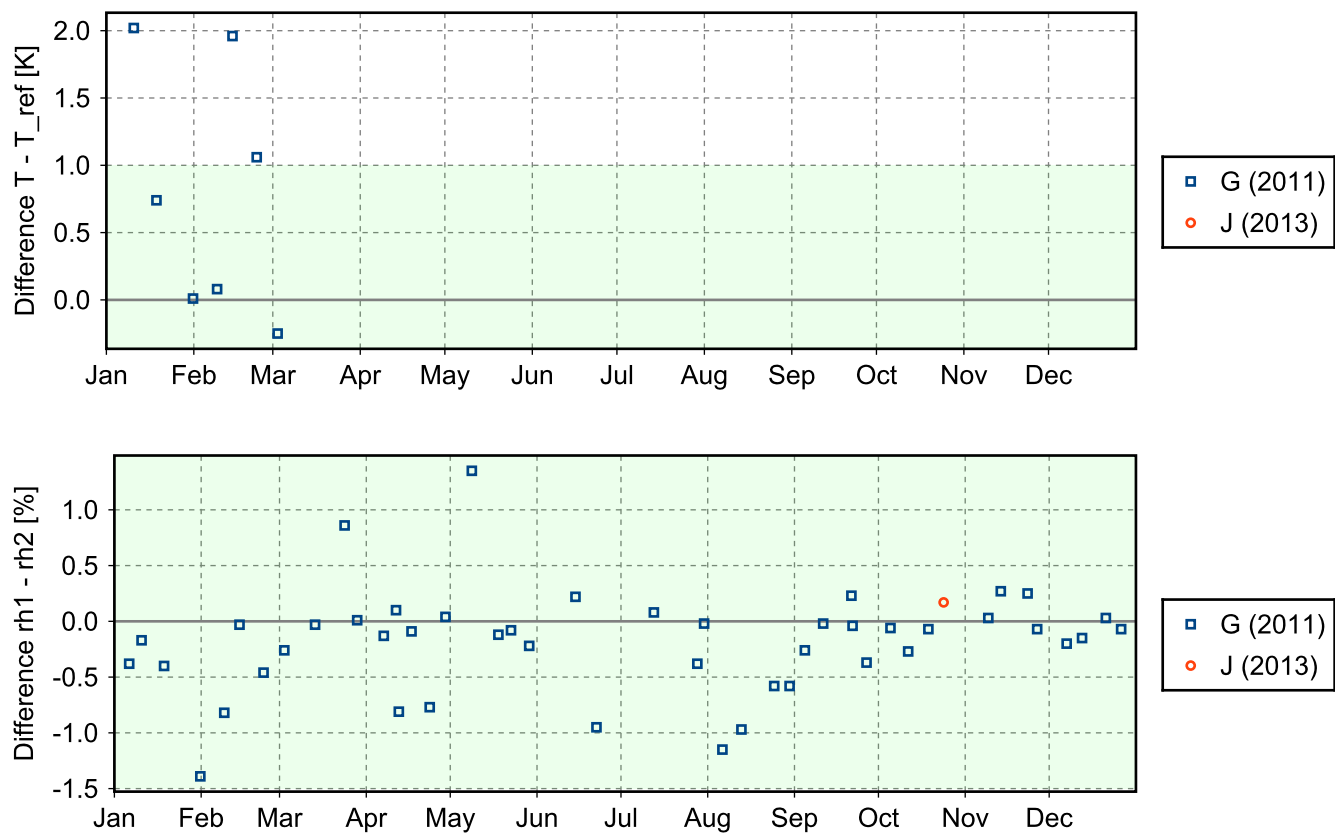
3.5.2 Stream: RS92

(1) GroundCheck: GC-GC25





(2) GroundCheck: GC-SHC



3.6 Measurement events

