



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

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(31.III.2016)

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**8th GRUAN Implementation-  
Coordination Meeting (ICM-8)**

Session 7

Boulder, USA  
25 April – 29 April 2016

## GRUAN Station Report for Lauder

*(Submitted by Richard Querel)*

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### Summary and Purpose of Document

Report from the GRUAN station Lauder for the period March 2015 to March 2016.

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## GRUAN Station Report for Lauder (LAU)

Reporting for the period Mar 2015 to Mar 2016

Date: 31-Mar-2016

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### **Overview**

We launch weekly RS92+ECC and monthly RS92+ECC+iMet+FPH that are all submitted to GRUAN through the RsLaunchClient. Everything is current but only partially accounted for in the data statistics because we are now using the MW41 software which is not fully supported by GRUAN yet. Back processing will be possible. Our GNSS time-series is uploaded to GFZ. Once data streams are available we are keen to compare the GRUAN processing pipelines with the NDACC-related streams we have at present, i.e. for ozonesonde, FTIR, Dobson, LIDAR, Microwave, etc.

### **Change and change management**

Launching dual sondes. Using MW41 software for both systems. Potentially going to build a balloon inflation building on the current balloon filling site.

### **Resourcing**

We are 7 full-time staff (3 scientists, 4 technicians). We have a new scientist beginning May 2016 which will bring us up to 8. Through structural changes the 2 modellers previously located at Lauder have been shifted up to Wellington. Overall, funding is unchanged but we are still effectively understaffed, especially in the area of technical support.

### **Site assessment and certification**

Nothing for Lauder, but I am investigating what may be done to start a balloon program at Arrival Heights, Antarctica (our sister site). This could lead to a NZ Antarctic GRUAN site.

### **GRUAN-related research**

We are launching weekly RS92/RS41 as part of a larger intercomparison effort. We have a PhD student working on SASBEs using Lauder data.

### **WG-GRUAN interface**

Potentially a letter of support for the development of GRUAN capabilities at Arrival Heights.

### **Items for ICM-8 plenary discussions**

No.

### **Future plans**

SAGE-III-ISS validation campaign. Sentinel-5 Precursor campaign. Our UV and UV/VIS spectrometers are being refreshed with new hardware during an evaluation for future-proofing.





# GRUAN Station Report for Lauder (LAU), 2015

Reported time range is Nov 2014 to Feb 2016

Created by the Lead Centre

Version from 2016-04-18

## 1 General GRUAN station information

Info	Value
Station name	Lauder
Unique GRUAN ID	LAU
Geographical position	-45.0500 °S, 169.6800 °E, 370.0 m
Operated by	NIWA   National Institute of Water & Atmospheric Research
Main contact	Querel, Richard
WMO no./name	-
Operators	current 5, change +1 / -0
Sounding Site	1
GNSS	1

### 1.1 General information about GRUAN measurement systems

System	Type	Setups	Measurements	As scheduled
LAU-GN-01	GNSS	1	0	0.00 %
LAU-RS-01	Sounding Site	6	65	92.86 %

### 1.2 General comments from Lead Centre

#### 1.2.1 General

In March 2014, the dataflow has started.

## 2 System: GNSS Site LAUD (LAU-GN-01)

<b>Info</b>	<b>Value</b>
System name	GNSS Site LAUD
Unique GRUAN ID	LAU-GN-01
System type	GNSS (GN - GNSS)
Geographical position	-45.0380 °S, 169.6840 °E, n m
Operated by	NIWA   National Institute of Water & Atmospheric Research
Instrument contact	Querel, Richard
Started at	2012-05-01
Defined setups	1 (HOURLY)
Possible streams	-

### 2.1 Lead Centre comments

#### 2.1.1 Dataflow

Measurements are recorded at station since May 2012.

Dataflow of GNSS data to GRUAN LC and the GRUAN GNSS processing centre at GFZ has started in February 2015. The current dataflow includes manufacturer raw data, converted raw data (RINEX) and instrument logs, containing all equipment changes.

### 3 System: Radiosonde Launch Site (LAU-RS-01)

Info	Value
System name	Radiosonde Launch Site
Unique GRUAN ID	LAU-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	-45.0500 °S, 169.6800 °E, 370.0 m
Operated by	NIWA   National Institute of Water & Atmospheric Research
Instrument contact	Querel, Richard
Started at	-
Defined setups	6 (OZONE, FPH-OZONE, RS-ONLY, RS41-ONLY, RESEARCH, OZONE-2)
Possible streams	ECC, FPH, IMET-1, RS41, RS92

#### 3.1 Lead Centre comments

##### 3.1.1 Dataflow

Sonde dataflow to the GRUAN LC is operational since February 2014. This dataflow includes data from the Vaisala RS92-SGP, ECC ozone sonde, FPH water vapour, and Internet IMET-1. All launches are transmitted using the RsLaunchClient.

Processing of current RS92 data with the new MWX file format will be possible at the end of 2016.

Dual launches with RS92 and RS41 are performed since October 2015.

A GRUAN data product for the frostpoint hygrometer data is not yet available.

##### 3.1.2 Data quality

All measurements passed GRUAN Quality Control routines with the 'approved' label.

GC25 ground check corrections are within expected limits.

An additional ground check in the SHC (Standard Humidity Chamber) is performed since September 2014.

##### 3.1.3 General

Ozone soundings are launched weekly. Research soundings using FPH, ECC, iMet-1, and Vaisala RS92 are launched approximately once per month.

#### 3.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCDC
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##### 3.2.1 Stream: ECC

ECC		65	65	
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##### 3.2.2 Stream: FPH

FPH		11	11	
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##### 3.2.3 Stream: IMET-1

Product	Version	Soundings received	Available at LC	Distributed by NCDC
IMET-1		3	3	

3.2.4 Stream: RS41

RS41		17	17	
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3.2.5 Stream: RS92

RS92		65	65	
RS92-RAW	001		21	
RS92-GDP	002		21	21

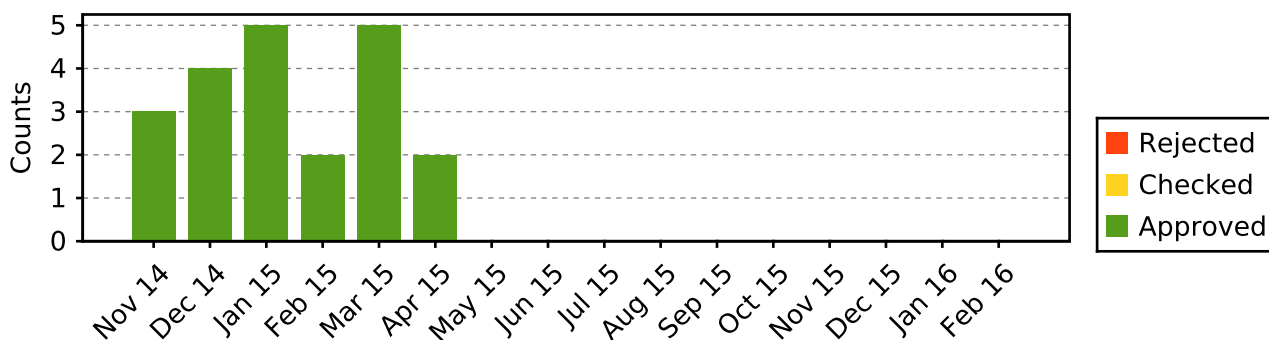
3.3 Data quality of current GRUAN data products

Month	Count	GRUAN Data Quality			Issues				
		Approved	Checked	Rejected	Meta-data	Process.	Press	Temp	RH

3.3.1 Stream: RS92 (Product: RS92-GDP-002)

Nov 14	3	3							1
Dec 14	4	4							
Jan 15	5	5							
Feb 15	2	2							
Mar 15	5	5							
Apr 15	2	2							
May 15									
Jun 15									
Jul 15									
Aug 15									
Sep 15									
Oct 15									
Nov 15									
Dec 15									
Jan 16									
Feb 16									
	21	21							1

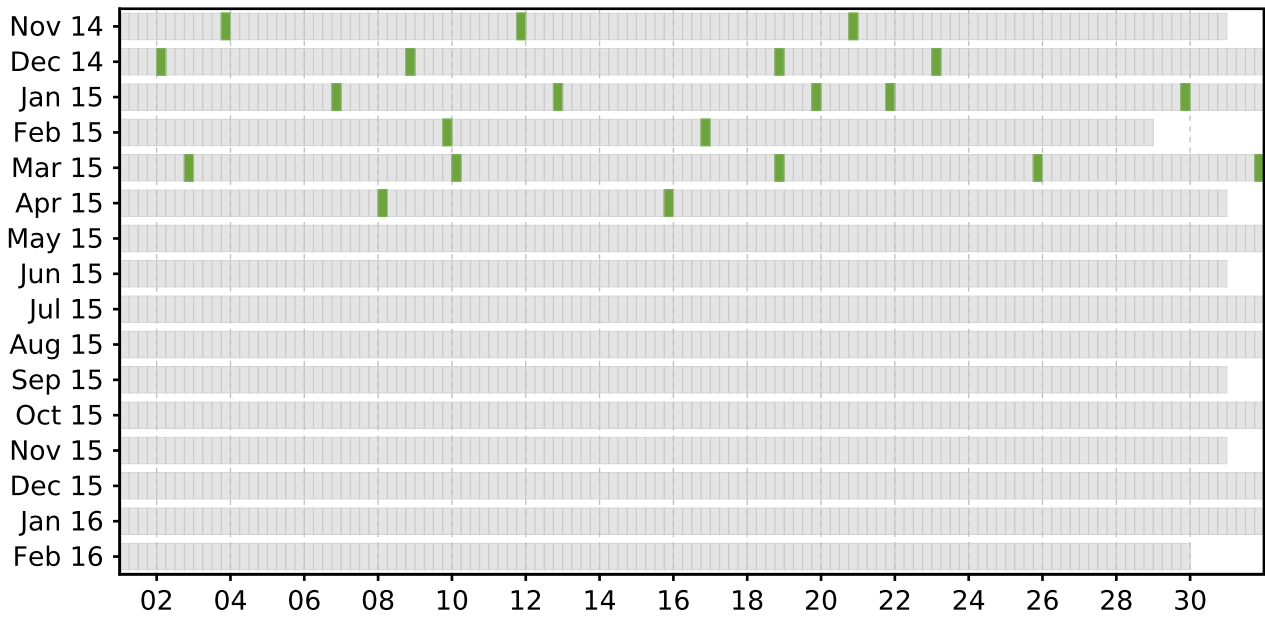
Data quality statistic of stream RS92





Month	Count	GRUAN Data Quality			Issues				
		Approved	Checked	Rejected	Meta-data	Process.	Press	Temp	RH

Schedule data quality of stream RS92



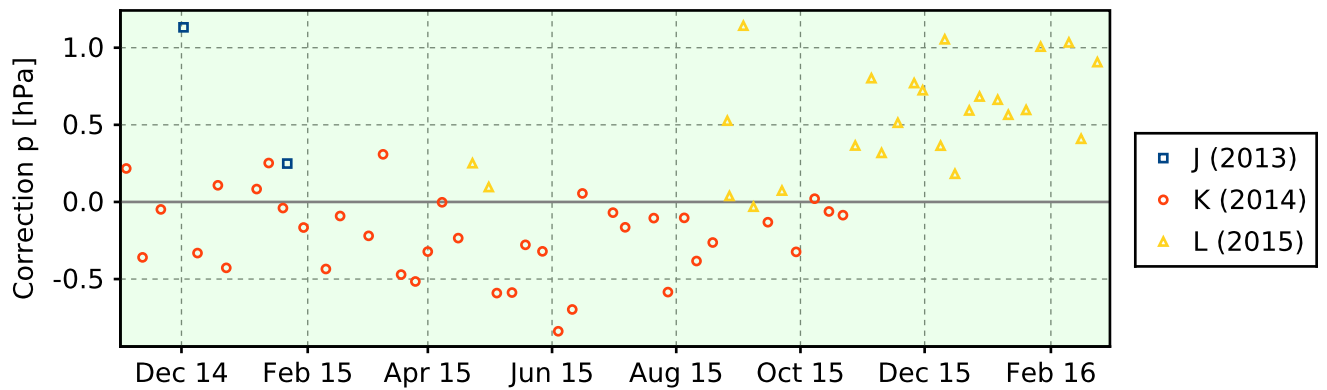
### 3.4 Instrument combinations of LAU-RS-01

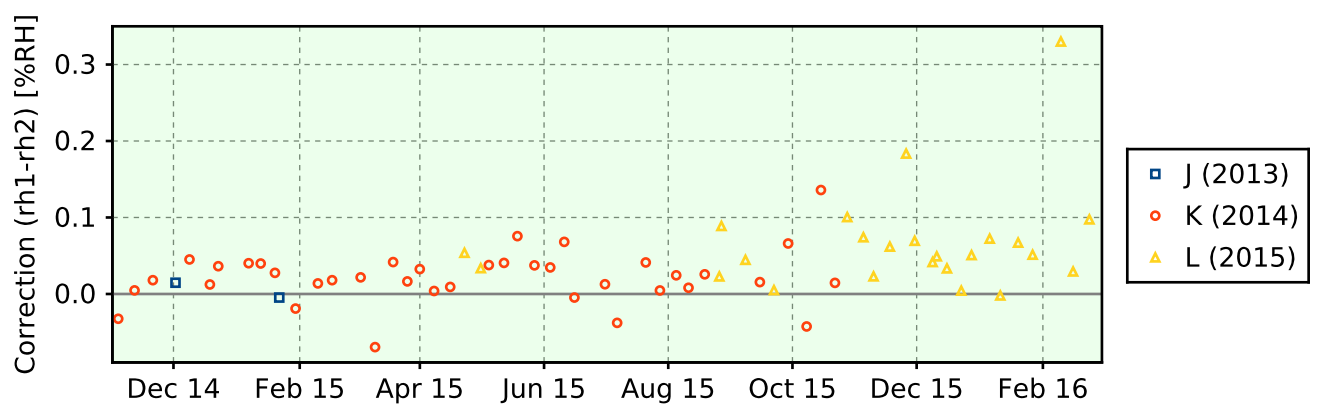
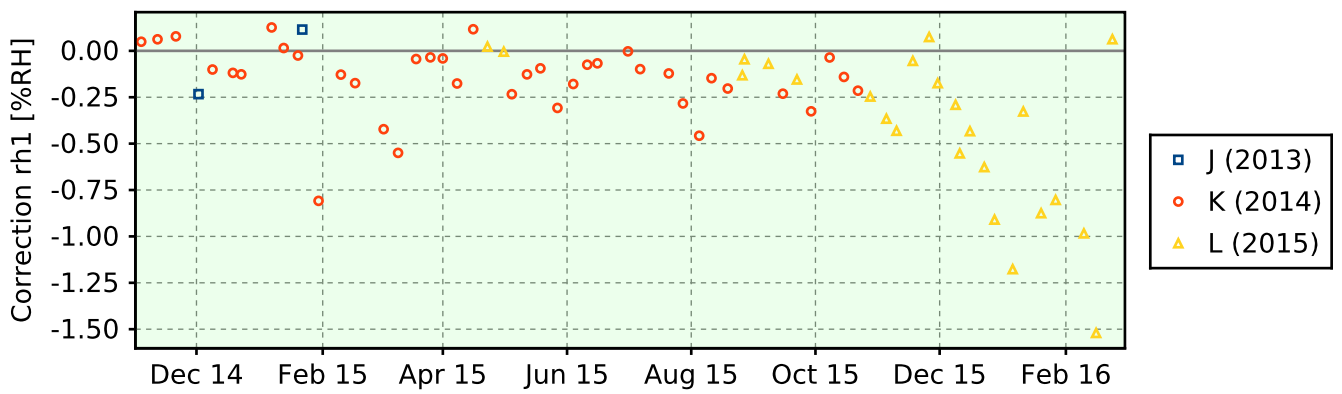
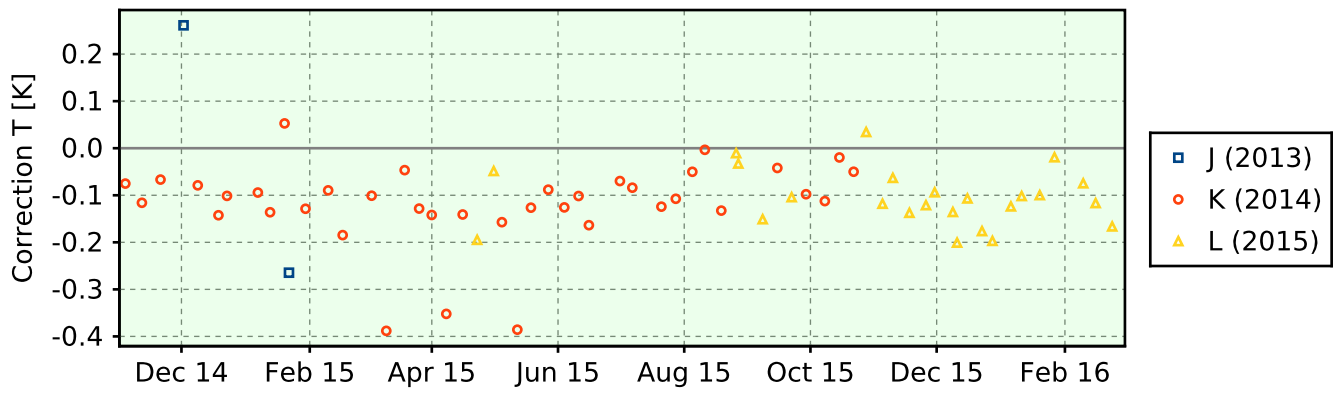
Count	Instrument combination
3	ECC, FPH, IMET-1, RS92
2	ECC, FPH, RS41, RS92
6	ECC, FPH, RS92
15	ECC, RS41, RS92
39	ECC, RS92

### 3.5 Instrument ground check

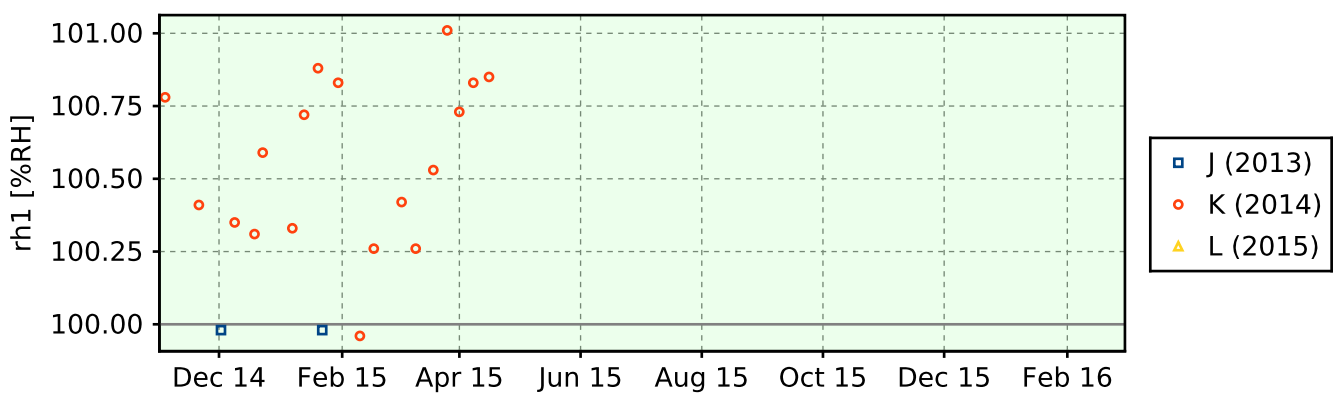
#### 3.5.1 Stream: RS92

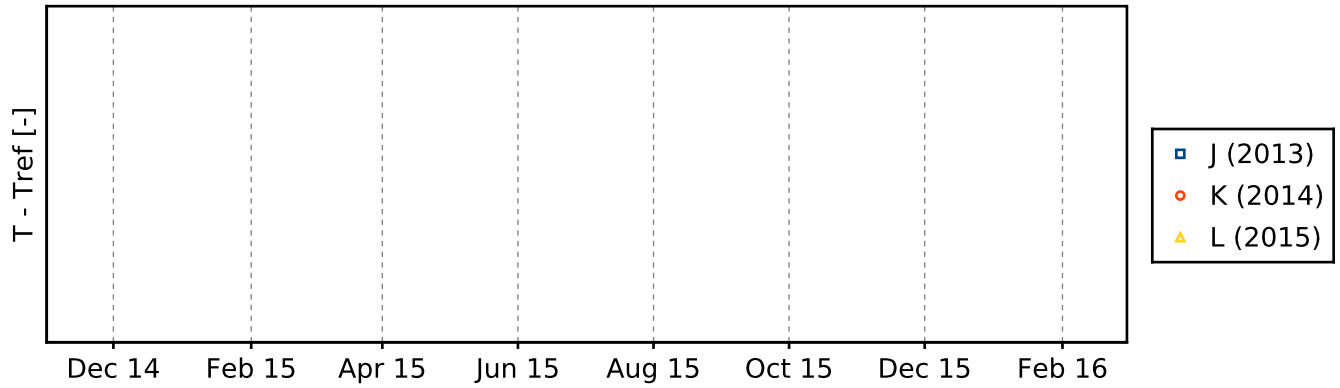
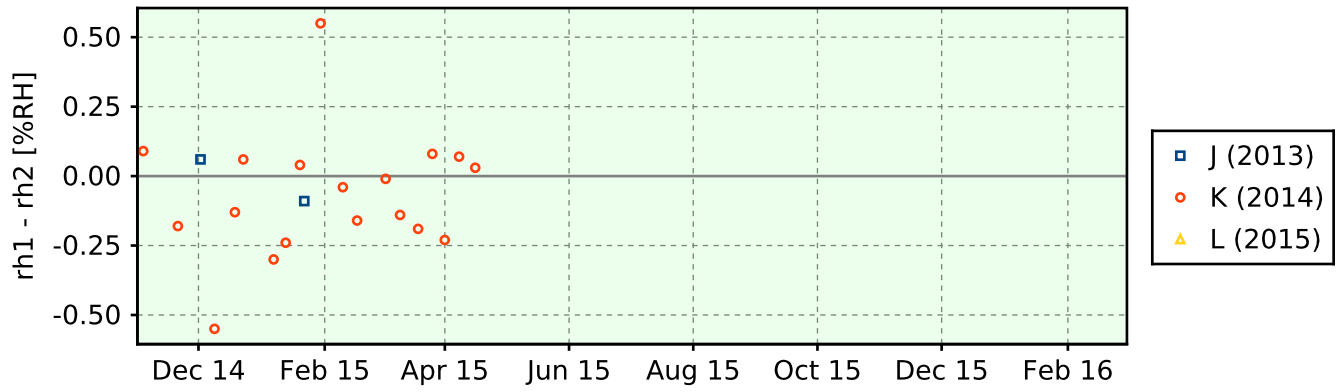
##### 3.5.1.1 GroundCheck: GC25





3.5.1.2 GroundCheck: SHC





### 3.6 Measurement events

#### 3.6.1 Stream: RS92

