

Updates from Tateno and introducing the new candidate sites

- Session 7, 14 June 2017 -

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Outline

Activity

1. GPS soundings in Tateno
2. Progress
3. Comparison between RS-11G and RS92-SGP
4. Comparison between iMS-100 and RS-11G
5. Future plan

New GRUAN candidate site

1. Minamitorishima
2. Syowa

GPS soundings in Tateno

Routine

1. RS-11G (single) : twice a day
2. RS92-SGP (single) : once a week (summer only)
3. Ozonesonde (single) : once a week

Comparison

1. RS92-SGP and RS-11G : once a week (except summer)
2. iMS-100 and RS-11G : 20 times X 4 season
3. MTR – RS11G
4. CFH – RS11G

Progress

- Support of GDP for iMS100
- Constitutions of new header of BUFR
 - 0 02 088 Volume of gas used in balloon
 - 0 03 027 Type of flight rig Code
 - 0 08 037 Baseline check significance
 - 0 08 038 Instrument data significance
- Renewal of Tateno's website

The screenshot shows the homepage of the JMA's Aerological Observatory website. At the top, there is a banner image of the observatory building with the title "JMA's Aerological Observatory" and a "Japanese" language selector. Below the banner, there are several navigation buttons: "Guidance About", "News", "Observation data", "Observatory tours", "Contact and Access", "Reporting a fallen sonde", and "Legal notice". The "News" section indicates "No current news". The "Contact and Access" section provides the address: "Aerological Observatory, Address: 1-2 Nagamine, Tsukuba-shi, Ibaraki 305-0052, Japan".

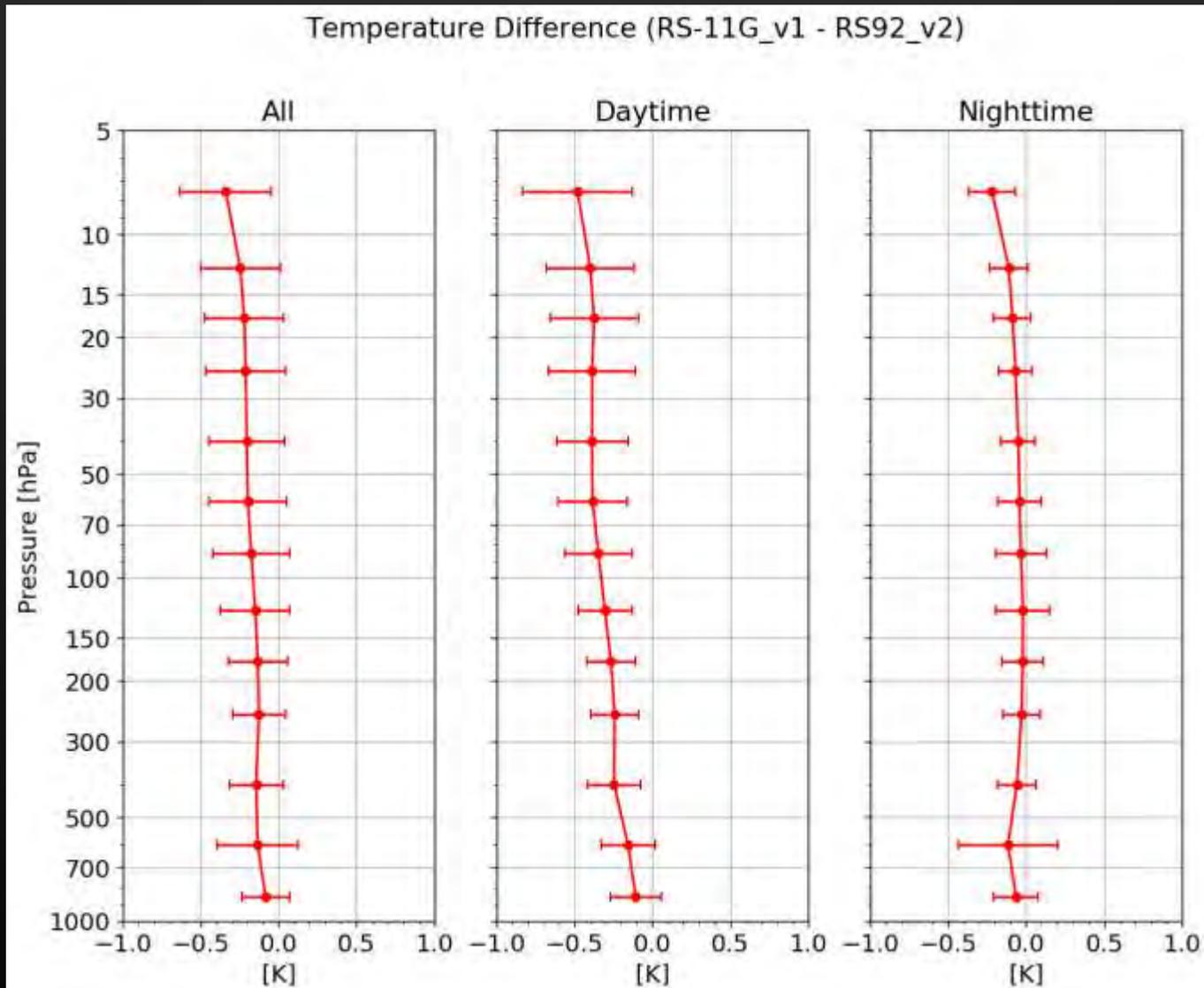
Below the main navigation, there are three columns of content:

- Lower Aerological Observation:** Includes a photo of a weather instrument and text: "Surface weather observation, surface sound observation, wind observation using Wind Profiler Lidar".
- Aerological Observation:** Includes a photo of a person holding a balloon and text: "Aerological observation: observation using ozone sondes, GNSS Pseudo-Water Vapor observation".
- Ozone and Radiation Observation:** Includes a photo of a sunset and text: "Ozone observation, solar UV observation, observation of solar and infrared radiation".

At the bottom right, there is a copyright notice: "Copyright (c) 2005, Aerological Observatory".

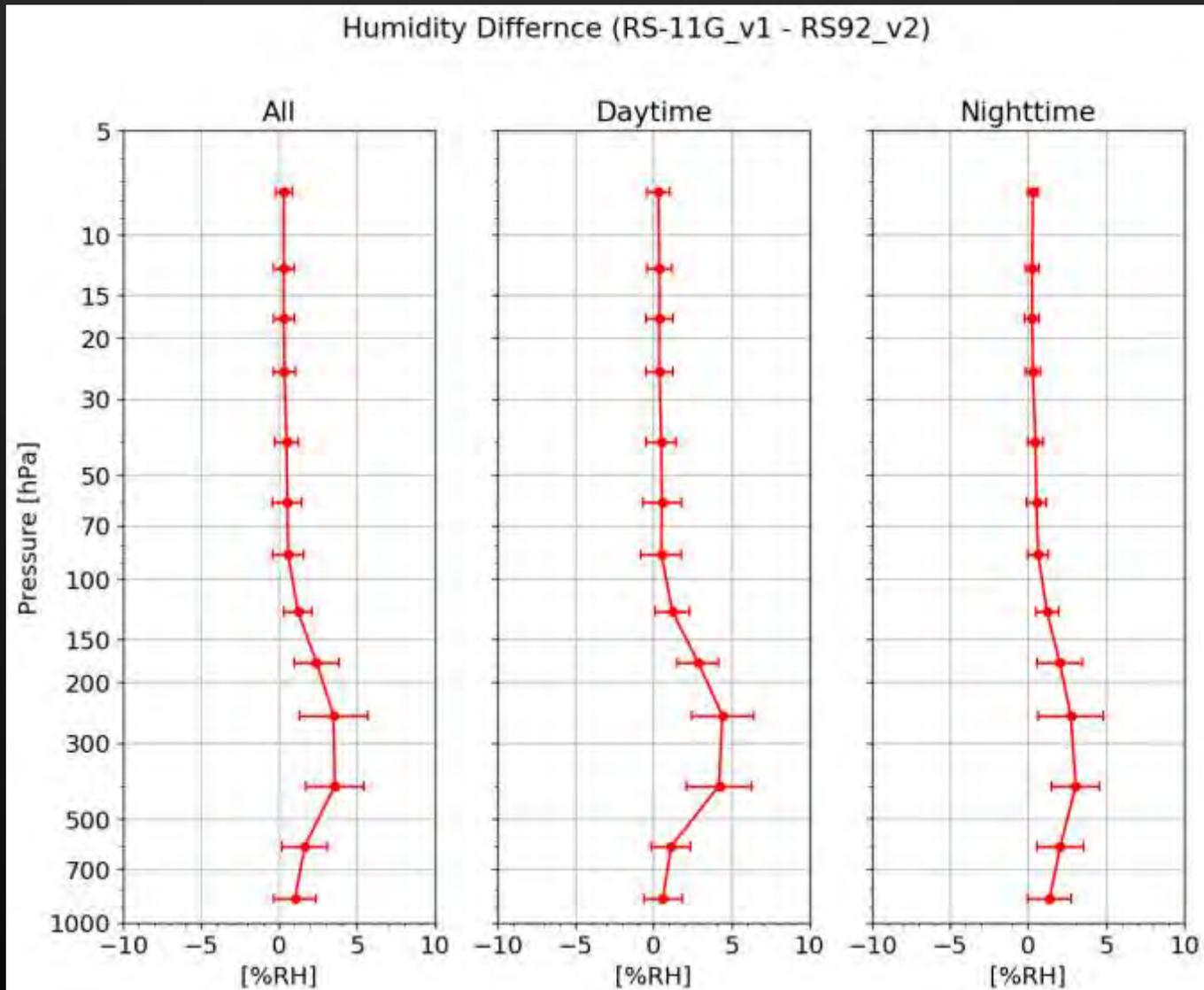
Comparison between RS-11G and RS92

Temperature Difference



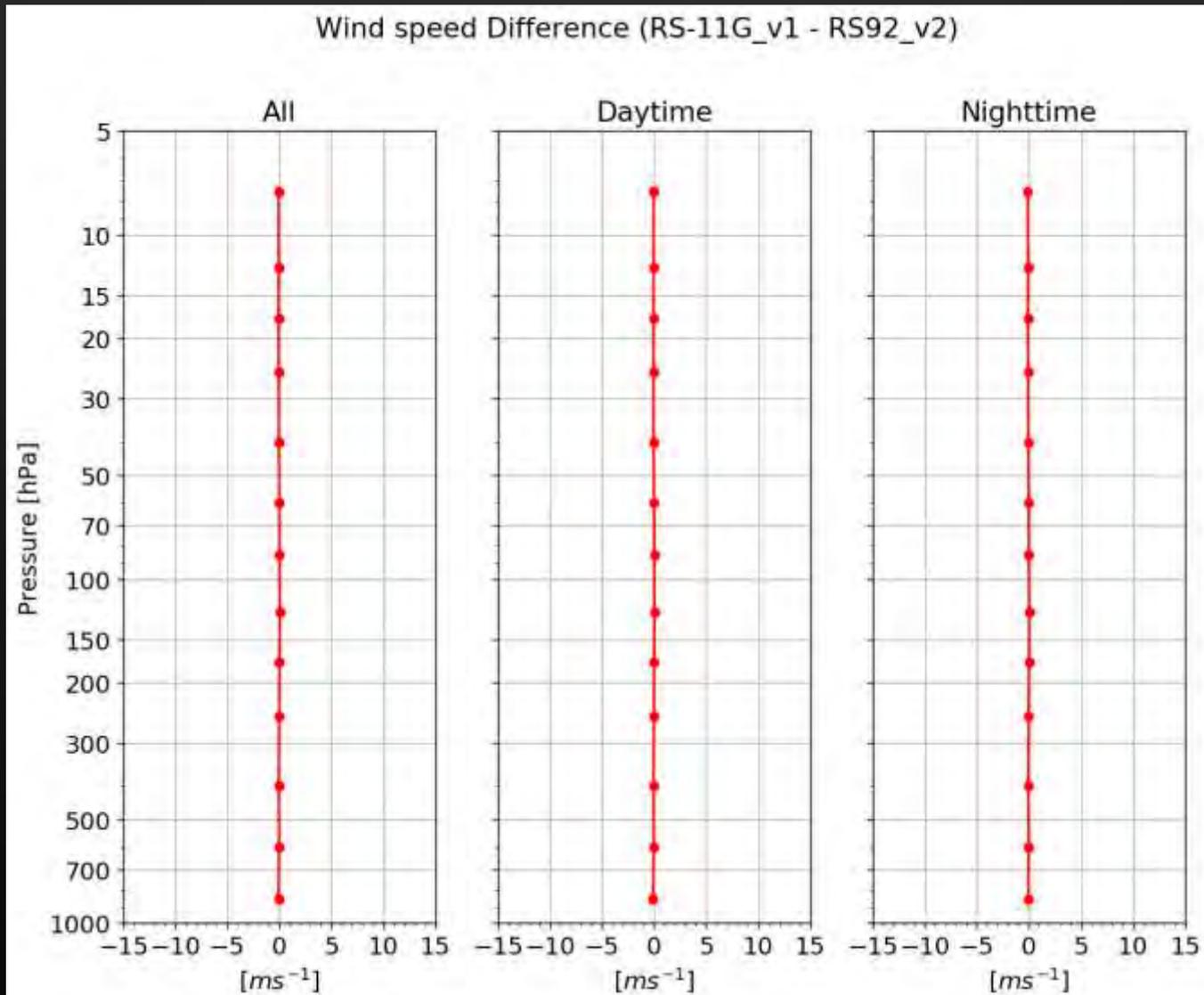
Comparison between RS-11G and RS92

Humidity Difference



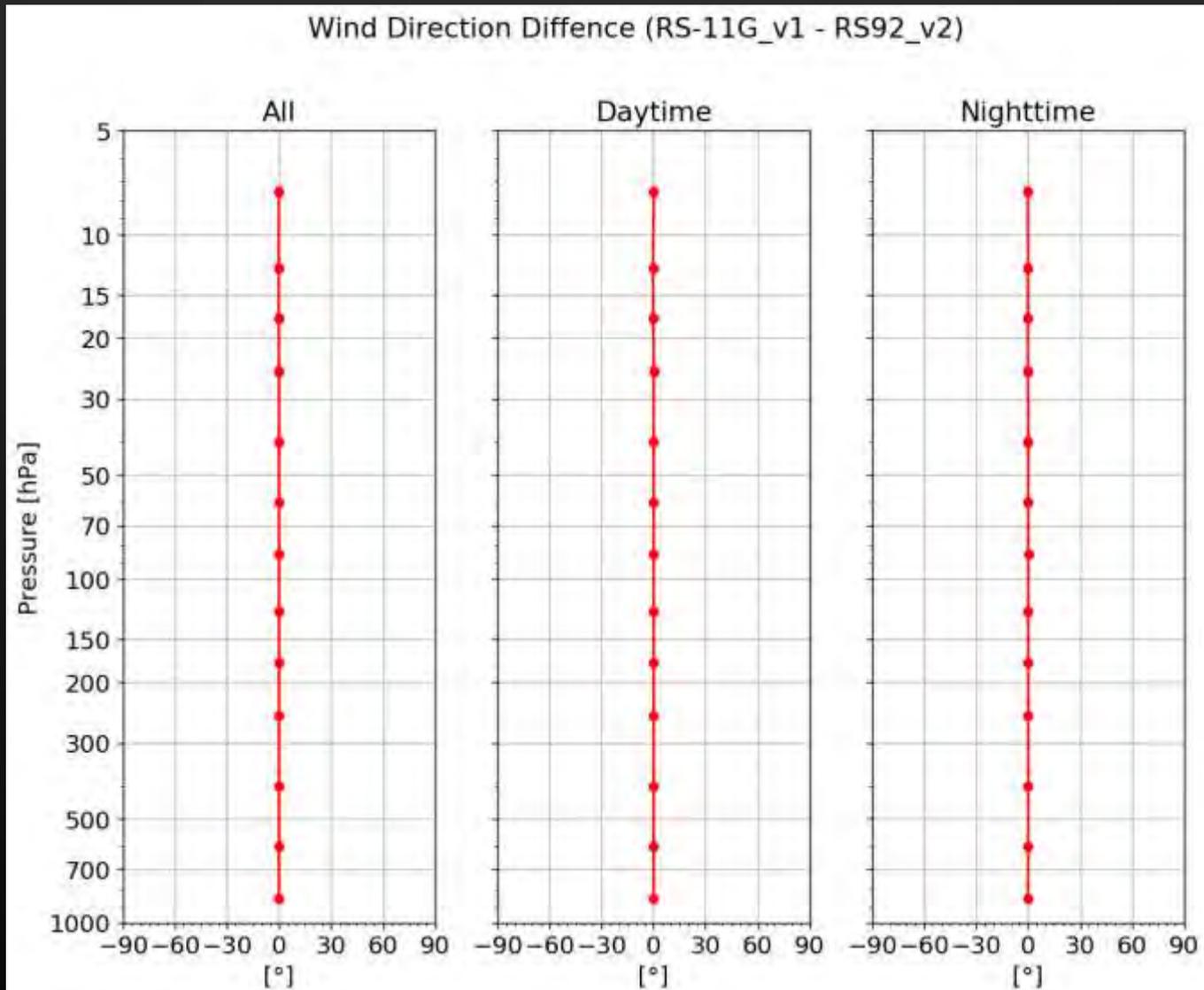
Comparison between RS-11G and RS92

Wind Speed Difference



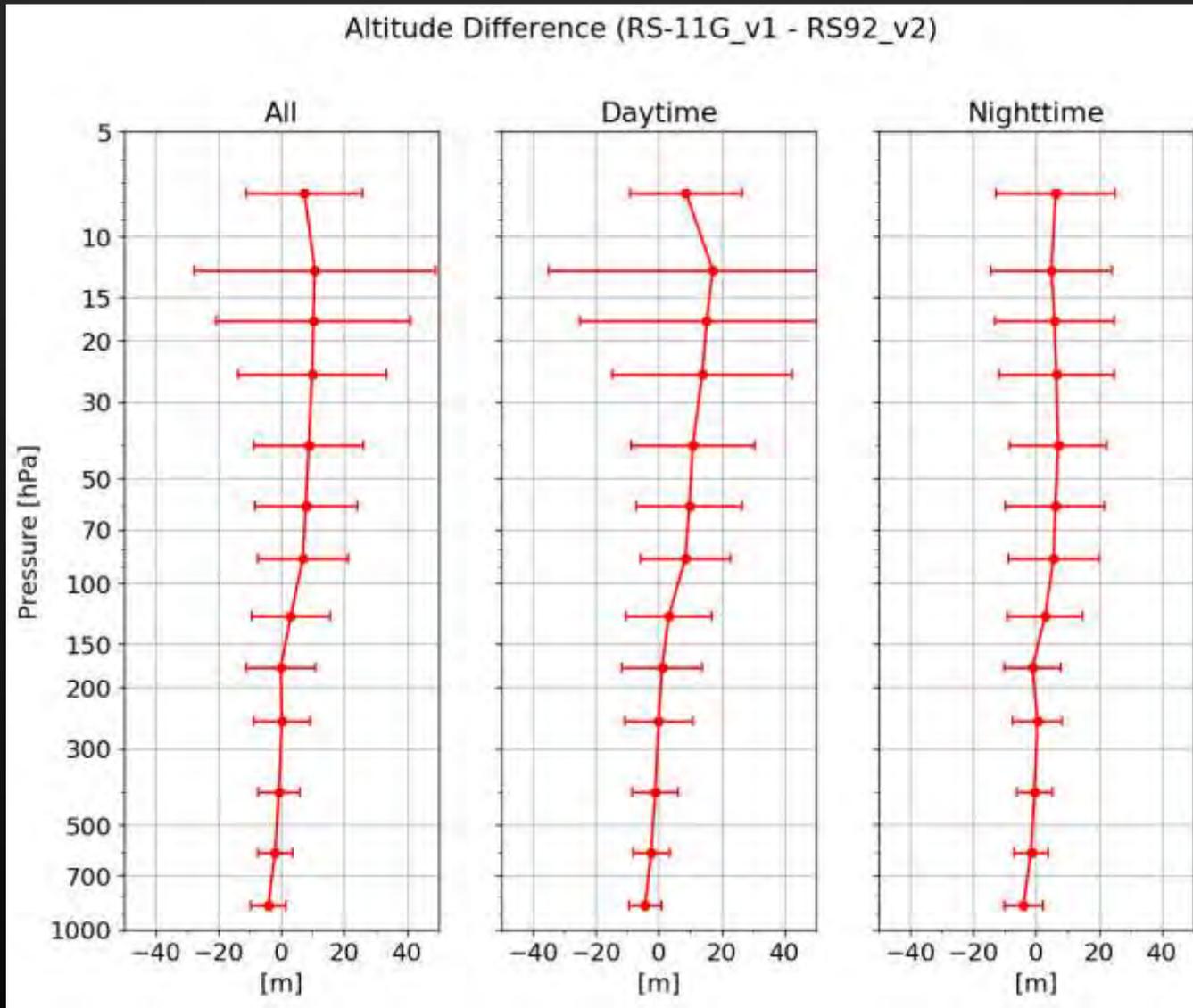
Comparison between RS-11G and RS92

Wind Direction Difference



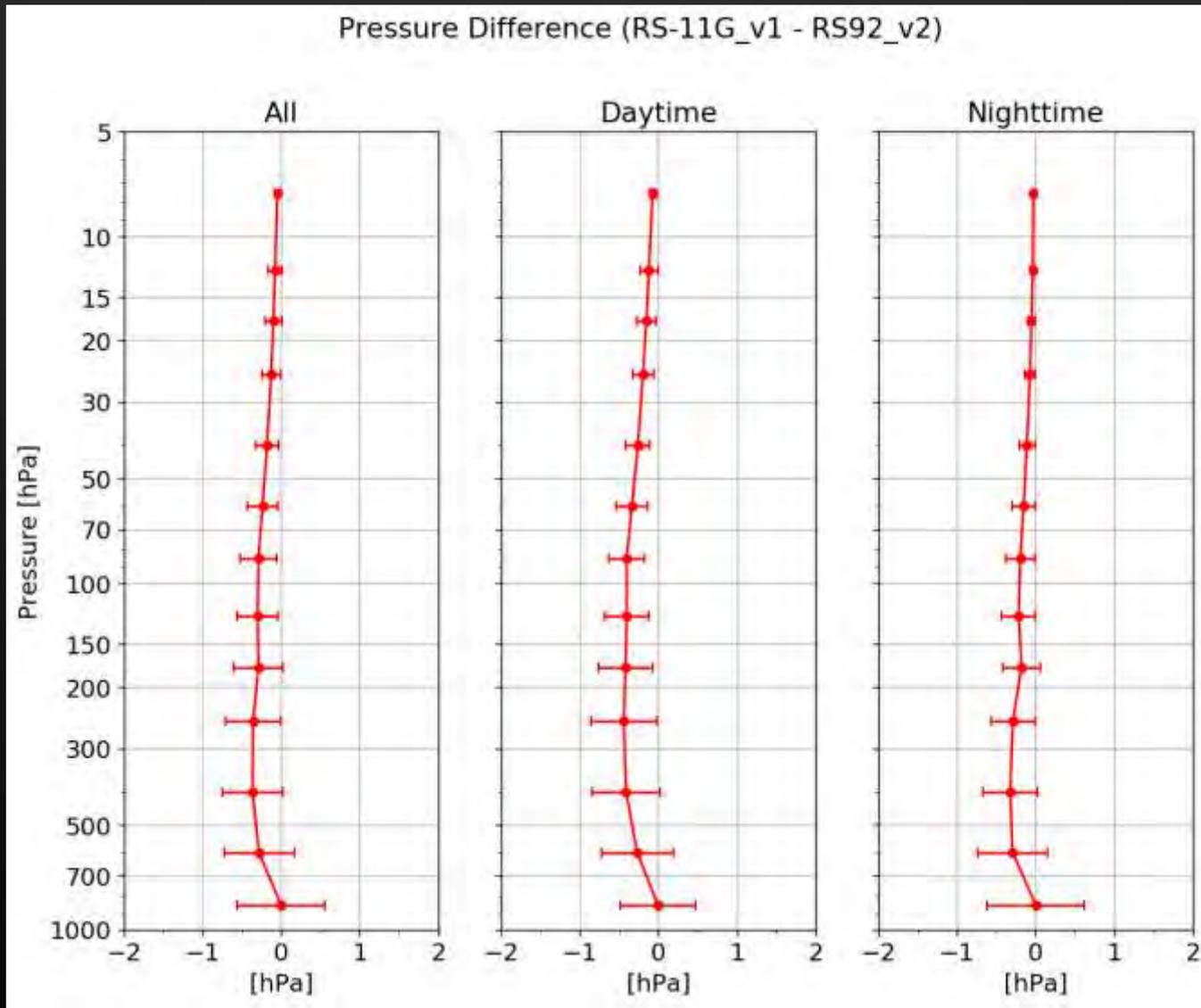
Comparison between RS-11G and RS92

Altitude Difference



Comparison between RS-11G and RS92

Pressure Difference



Comparison between RS-11G and iMS-100

(1)OCT. / 2016 (Autumn : 20 times)

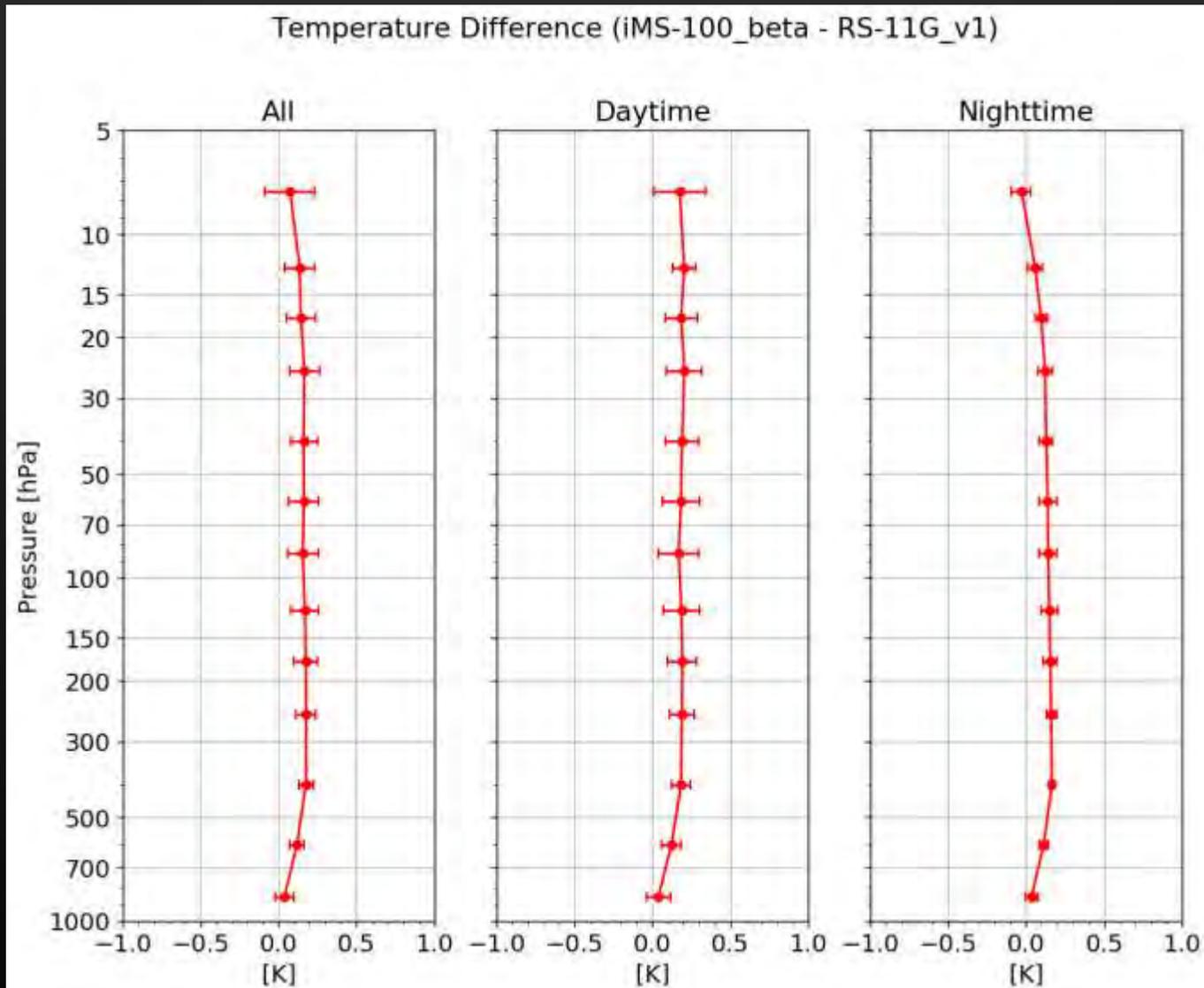
(2)JAN. / 2017 (Winter : 20 times)

(3)MAR. /2017 (Spring : 20 times)

(4)JUN. / 2017 (Summer : 20 times) - on going

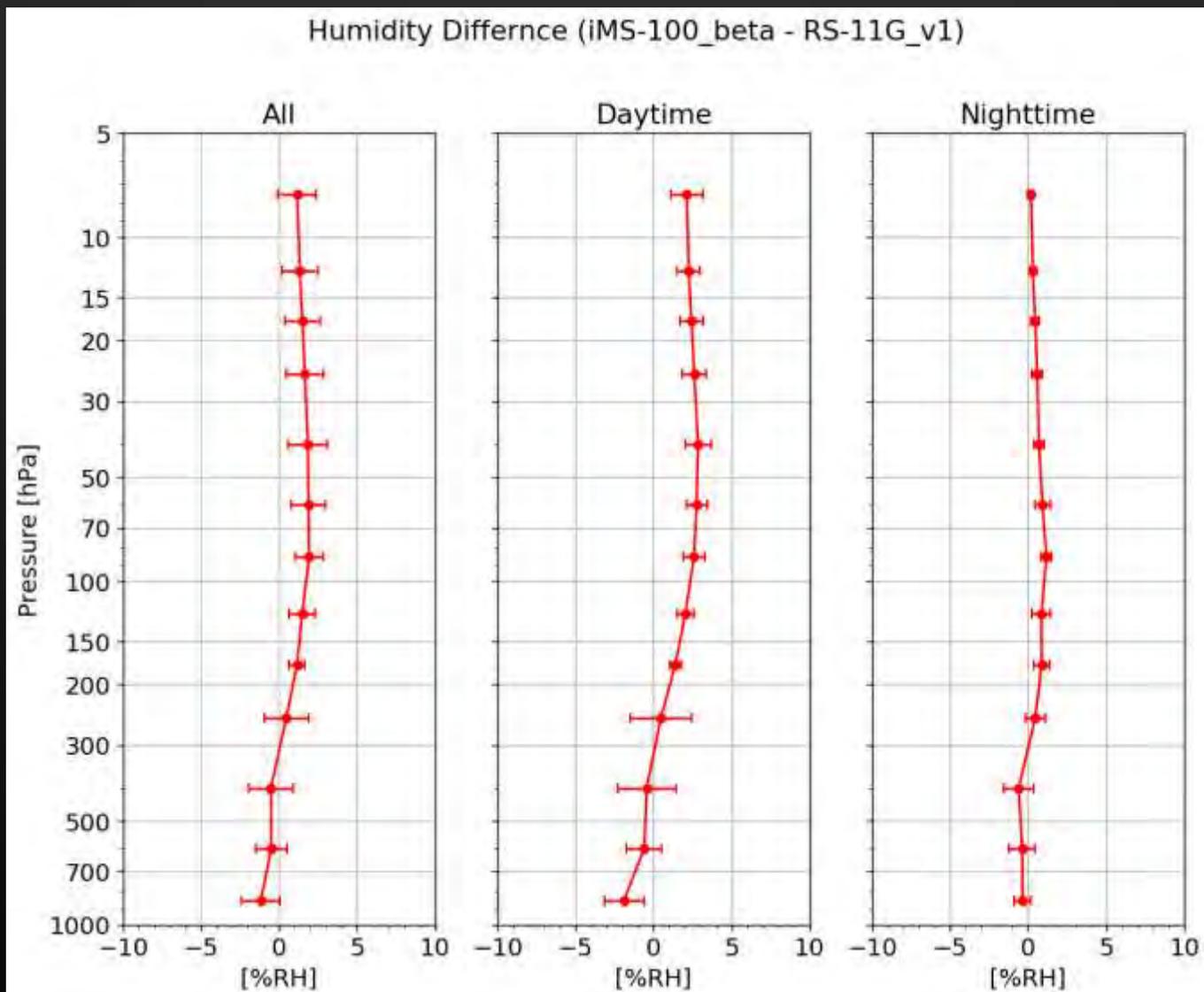
Comparison between iMS-100 and RS-11G

Temperature Difference in Spring



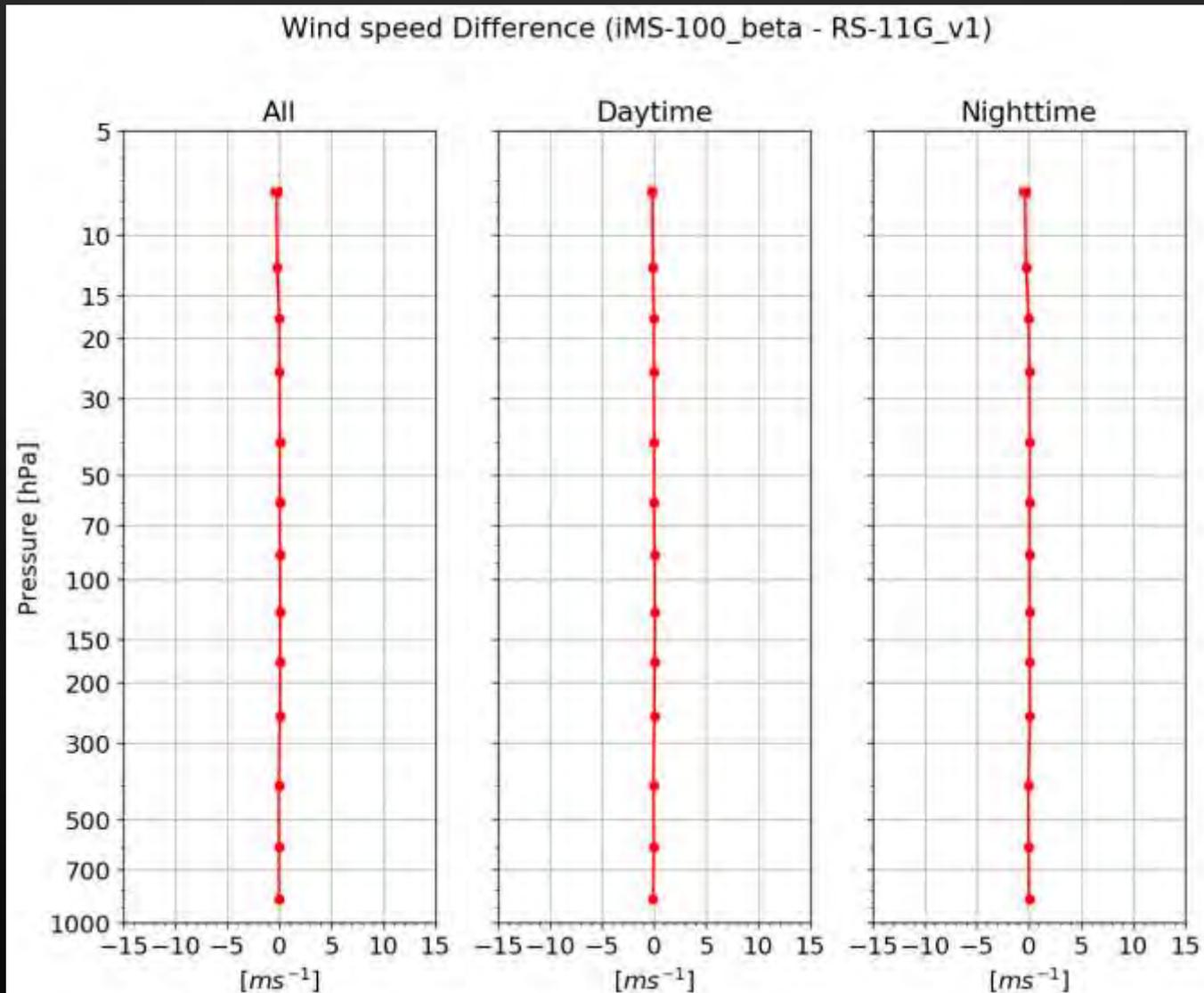
Comparison between iMS-100 and RS-11G

Humidity Difference in Spring



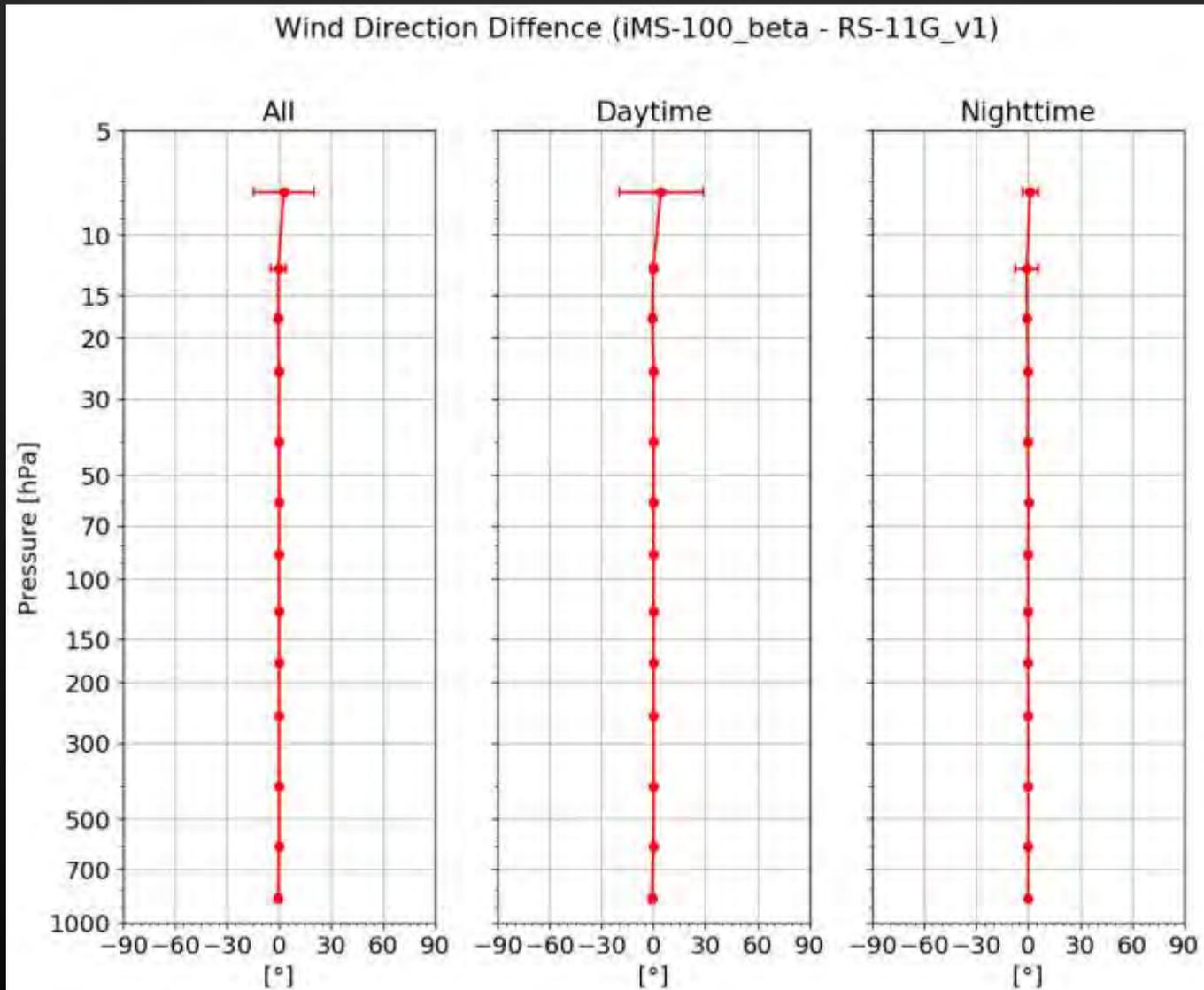
Comparison between iMS-100 and RS-11G

Wind Speed Difference in Spring



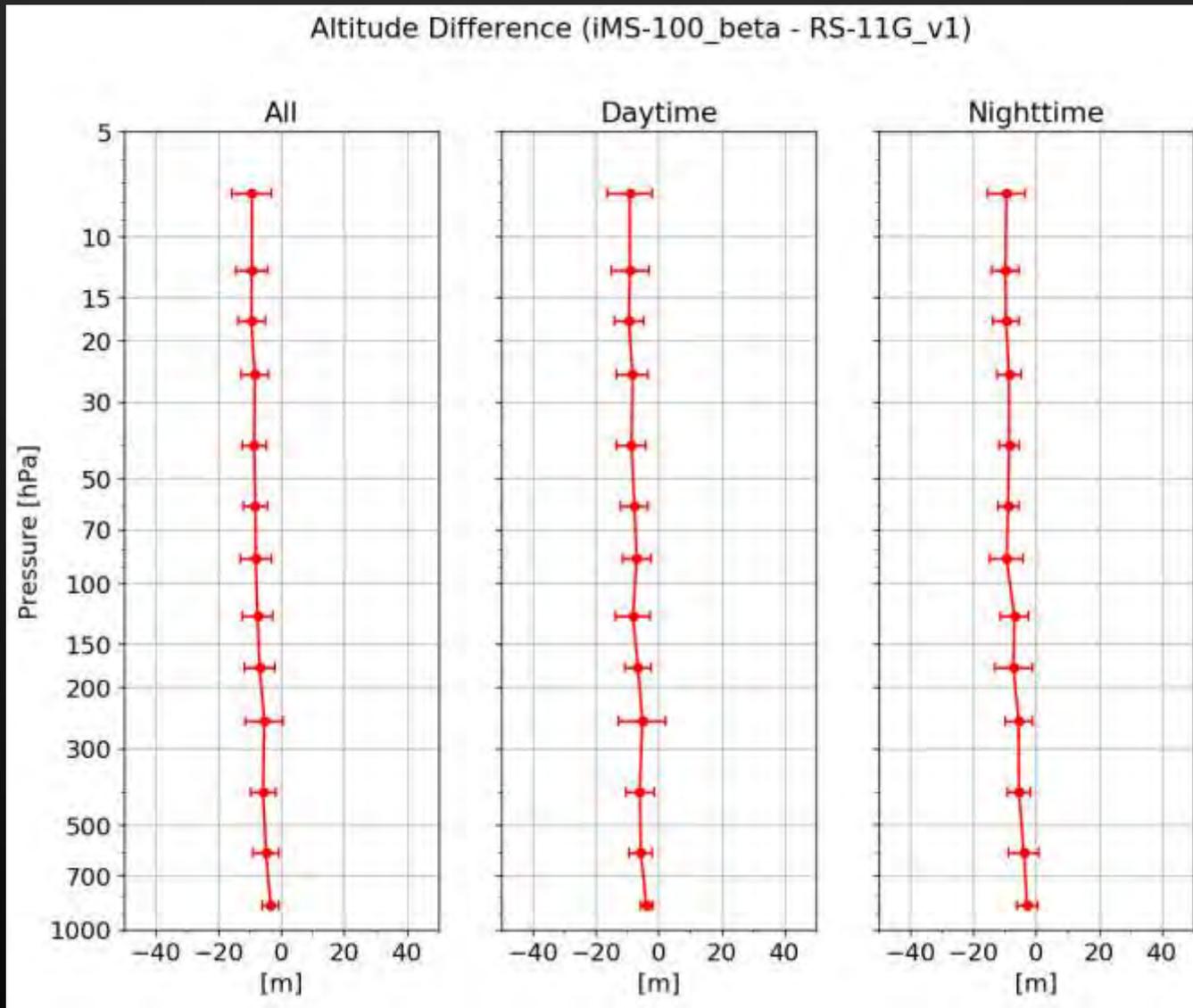
Comparison between iMS-100 and RS-11G

Wind Direction Difference in Spring



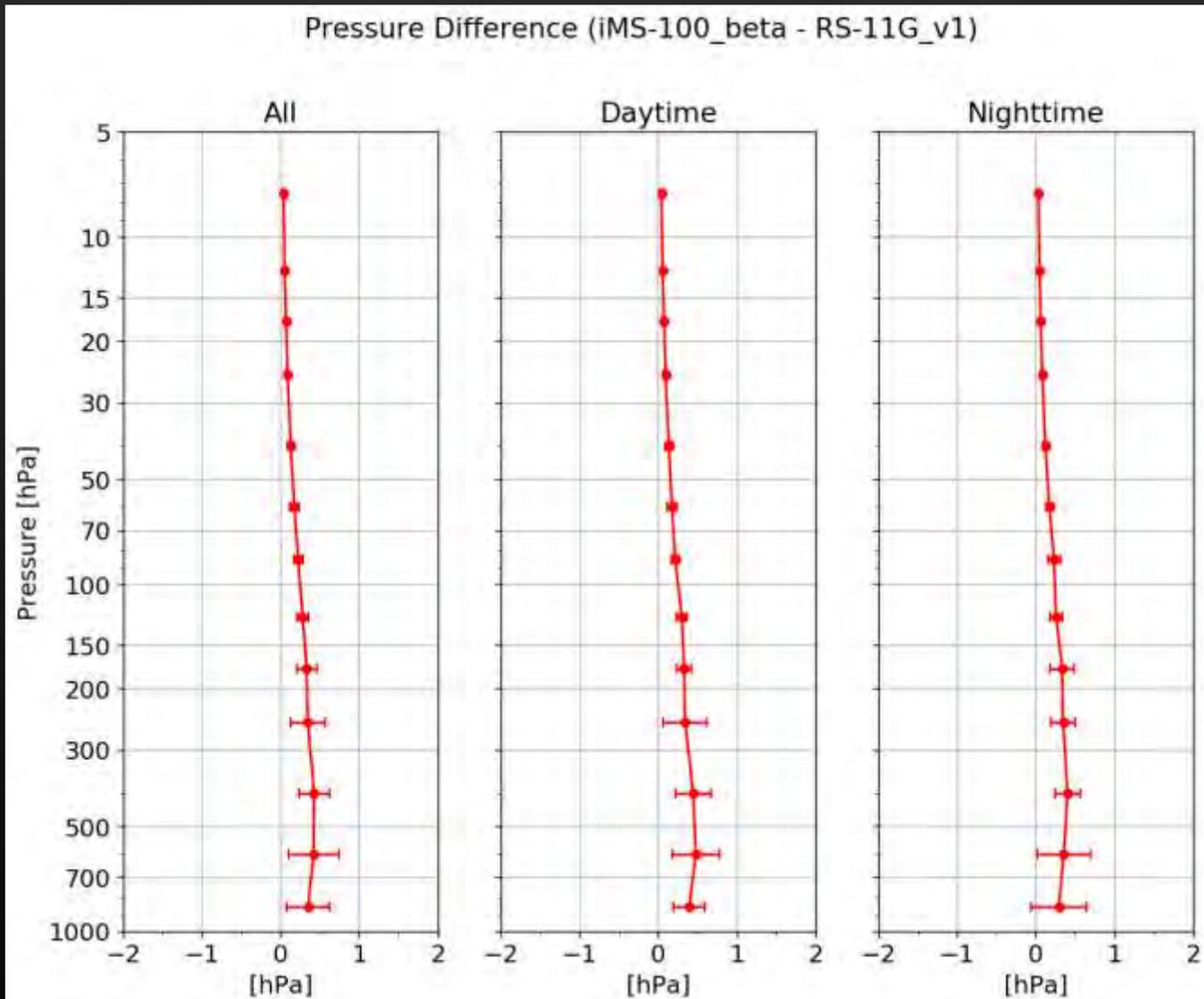
Comparison between iMS-100 and RS-11G

Altitude Difference in Spring



Comparison between iMS-100 and RS-11G

Pressure Difference in Spring



Future plan (1)

- Switch from RS-11G to iMS-100
(AUG.2017)
- Update of the sounding central system
(FEB.2018)
- Start sending of BUFR corresponding to new headers
(FEB.2018)
- Switch from RS92-SGP to RS41-SGP
(2018)
- Start sending of RINEX
(undecided)

Future plan (2)

Sonde Type and length of string

	2017	2018	2019
Tateno(Routine)	RS-11G (10m)	iMS-100 (15m)	Competitive bidding (15m)
Tateno(Comparison)	RS92-SGP (Dual : 30m, Single : 15m)		RS41-SGP (Dual : 30m, Single : 15m)
Minamitorishima	RS-11G (10m)	iMS-100 (30m)	
Syowa	RS-06G/RS-11G (15m / 10m)	RS-11G (15m)	

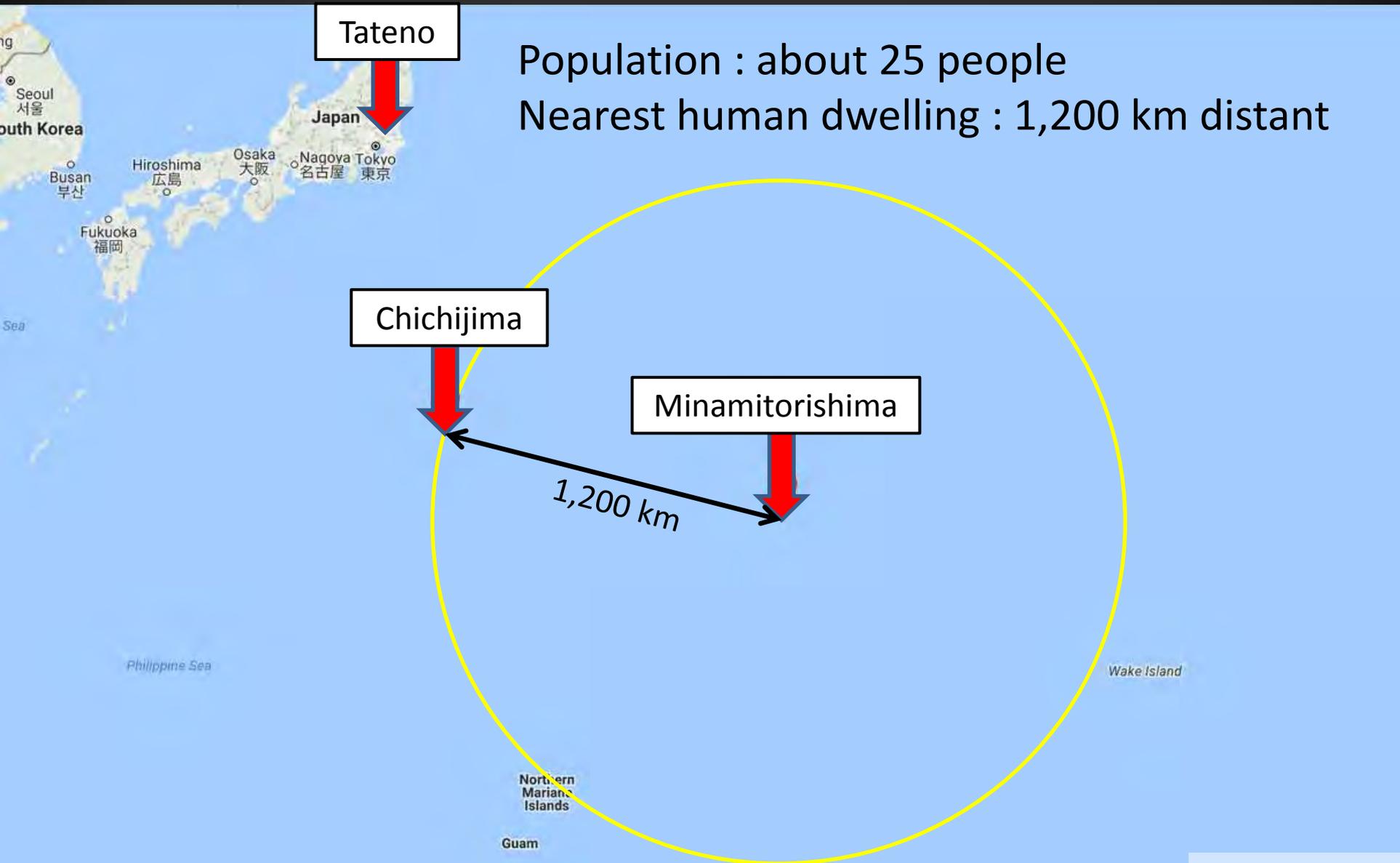
New GRUAN candidate site

1. Minamitorishima



Photo by JMA

Minamitorishima : Location(2)

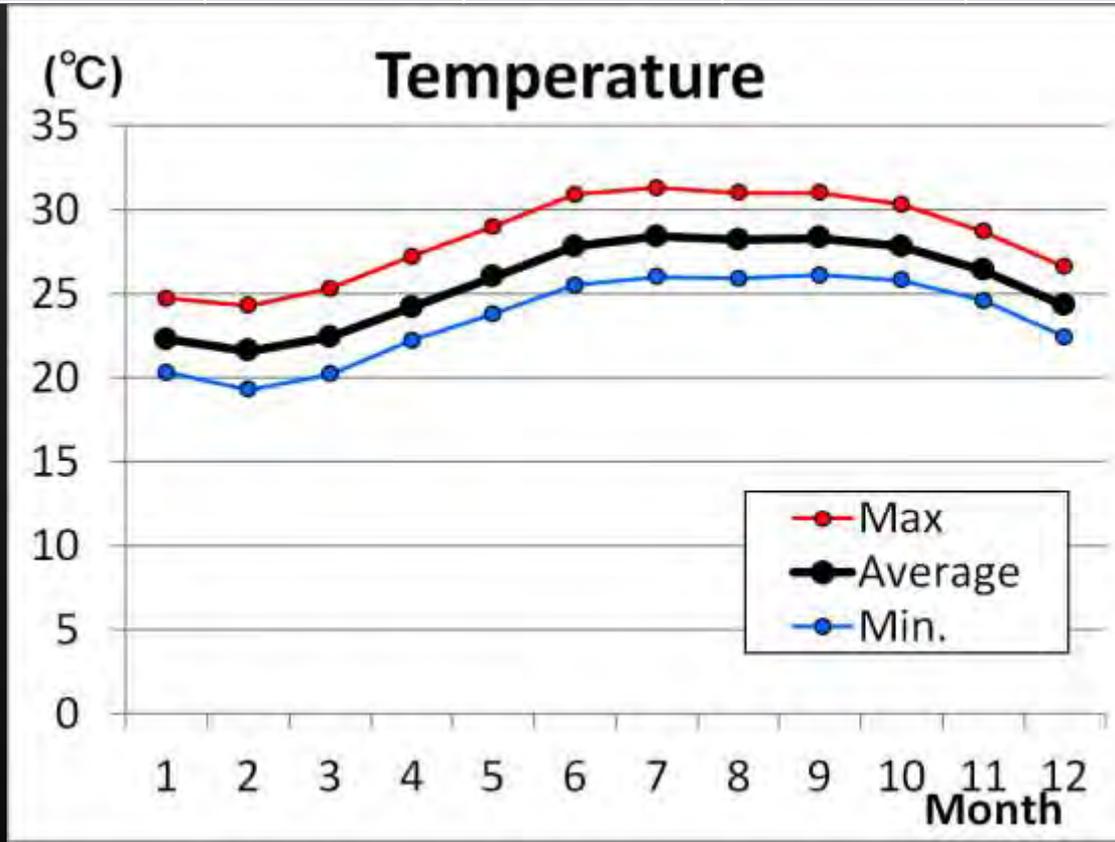


Minamitorishima : Full view



Minamitorishima : Climate

	Minimum Record	Minimum Moon	Annual Average	Maximum Moon	Max Record	Unit
Temperature	13.8	21.6	25.6	28.4	35.6	°C
Wind Velocity	0	4.3	5.8	7.1	43.3	m/s
Rain	0.5	42.6	87.8	167.3	513.5	mm/month



Minamitorishima : History

Year	Month	Event
1935	10	Start of meteorological observation (Observation data are missing)
1951	2	Start of upper-air observation
1951	4	Start of surface meteorological observation
1993	3	Start of CH ₄ , CO and surface O ₃ observation
1995	1	Start of Atmospheric Optical Depth observation
1996	1	Start of precipitation and drydeposition observation
2009	11	Designation as Wildlife Sanctuary
2010	4	Start of surface radiation observation
2011	2	Start of greenhouse effect gas observation using planes

Belongs to GAW and BSRN

Minamitorishima : Photo(1)



Photo by Masami Iwabuchi

Minamitorishima : Photo(2)



Photo by Masami Iwabuchi

Minamitorishima : Photo(3)



Minamitorishima : Photo(4)



Photo by Masami Iwabuchi

New GRUAN candidate site

2. Syowa

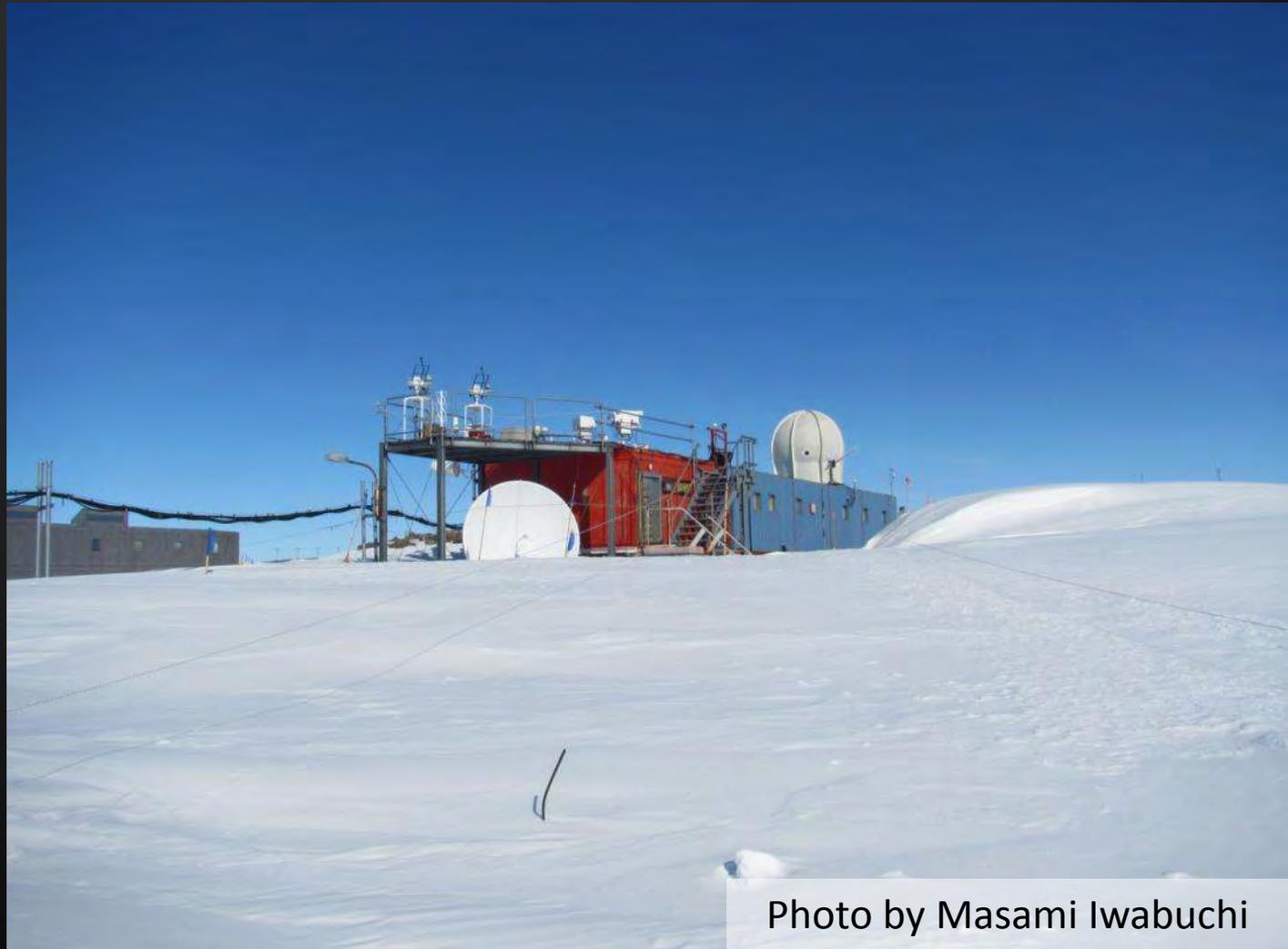
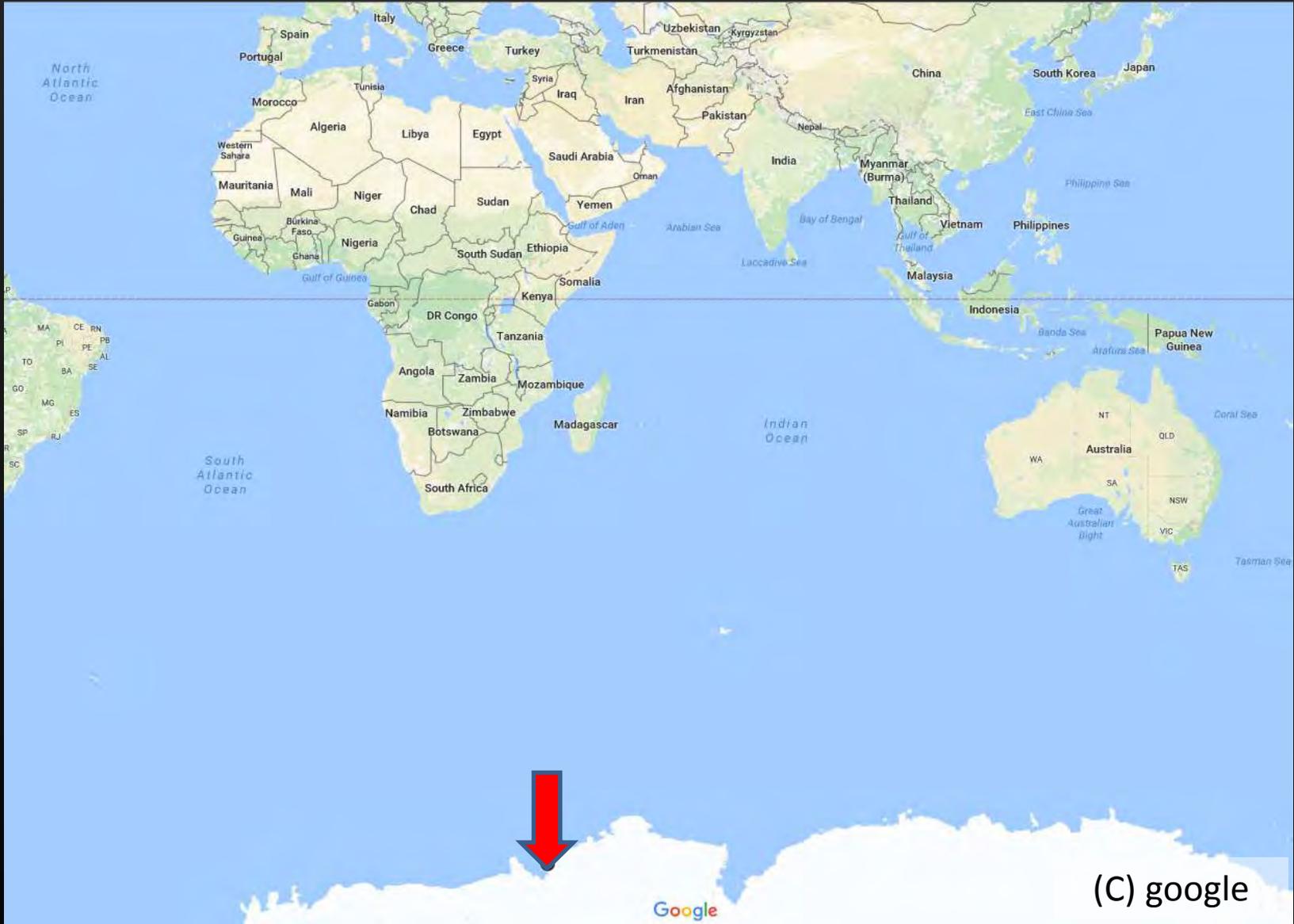


Photo by Masami Iwabuchi

Syowa : Location (1)

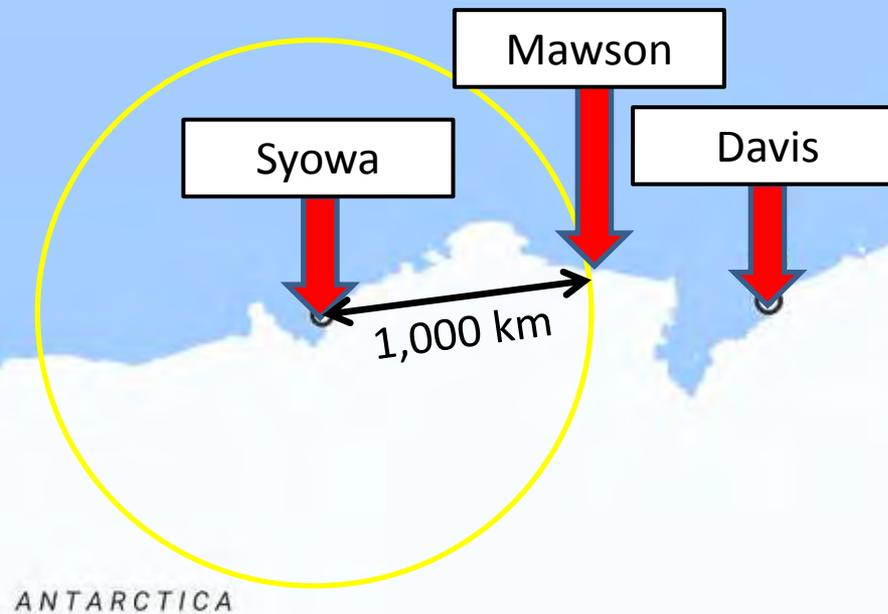
Location : 69.01S, 39.58E, 18m



(C) google

Syowa : Location (2)

Population : about 30 people (in winter)
Nearest human dwelling : 1,500 km distant



Syowa : Full view (1)

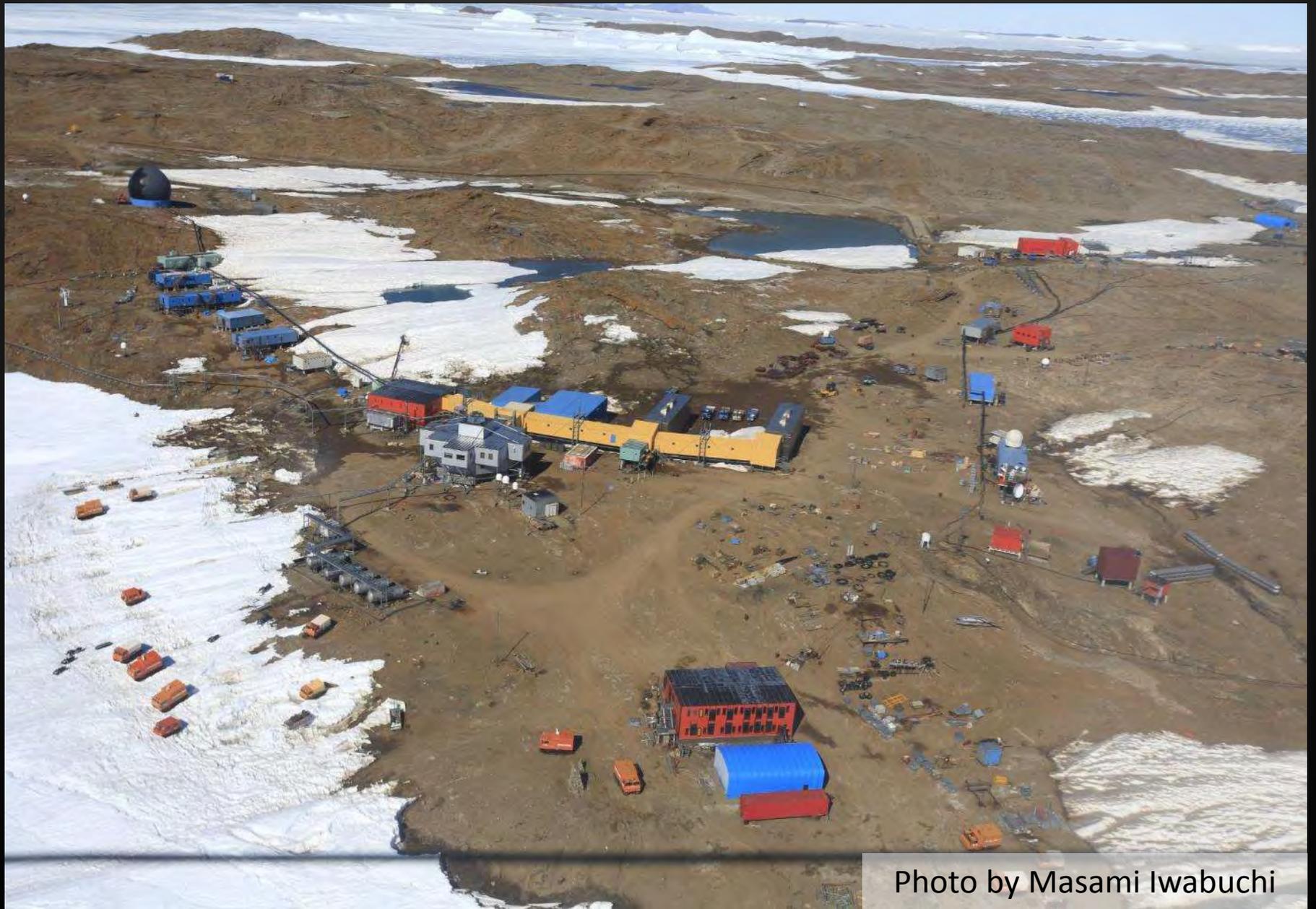


Photo by Masami Iwabuchi

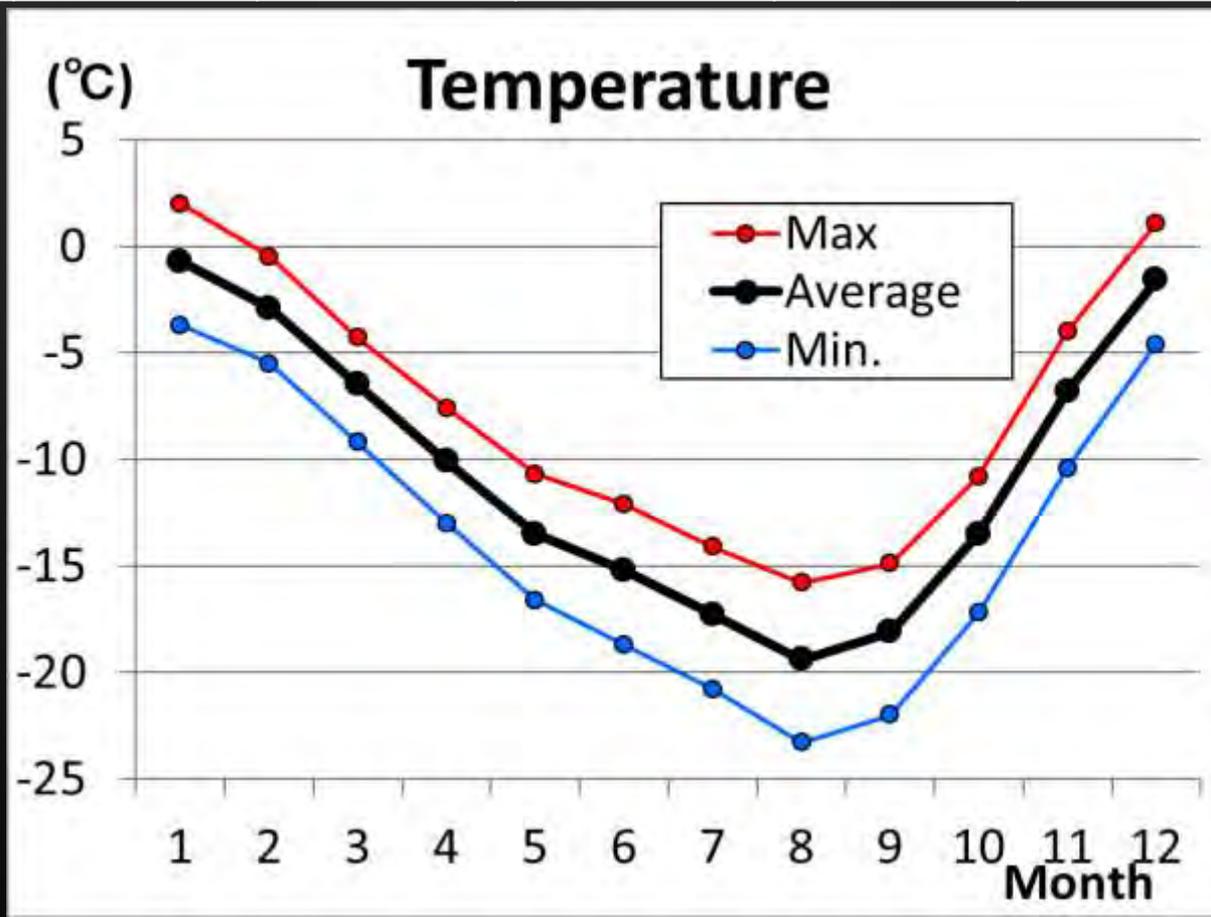
Syowa : Full view (2)



Photo by JARE

Syowa : Climate

	Minimum Record	Minimum Moon	Annual Average	Maximum Moon	Max Record	Unit
Temperature	-45.3	-19.4	-10.4	-0.7	10.0	°C
Wind Velocity	0.0	4.8	6.7	8.8	47.4	m/s



Syowa : History

Year	Event
1957	Start of surface meteorological observation
1959	Start of upper-air observation
1961	Start of total ozone observation
1966	Start of ozonesonde observation
1982	Discovery of ozone hole
1991	Start of surface radiation observation
1991	Start of spectral UV observation
1997	Start of surface ozone observation

Belongs to BSRN

Syowa : Photo(1)



Photo by Masami Iwabuchi

Syowa : Photo(2)



Photo by JARE

Syowa : Photo(2)



Photo by JARE

Syowa : Photo(3)



Photo by Masami Iwabuchi