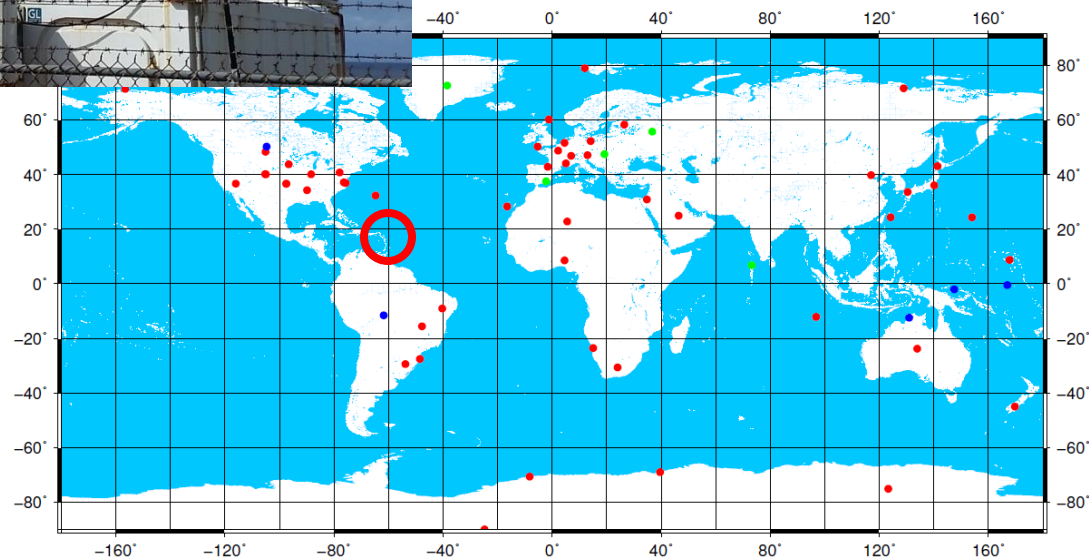


New Sites Proposal Discussion

Barbados Cloud and radiation Observatory



and closed BSRN Stations, March 2015



- Running Stations
- Planned Stations
- Closed Stations

Barbados (Stephan Kinne)

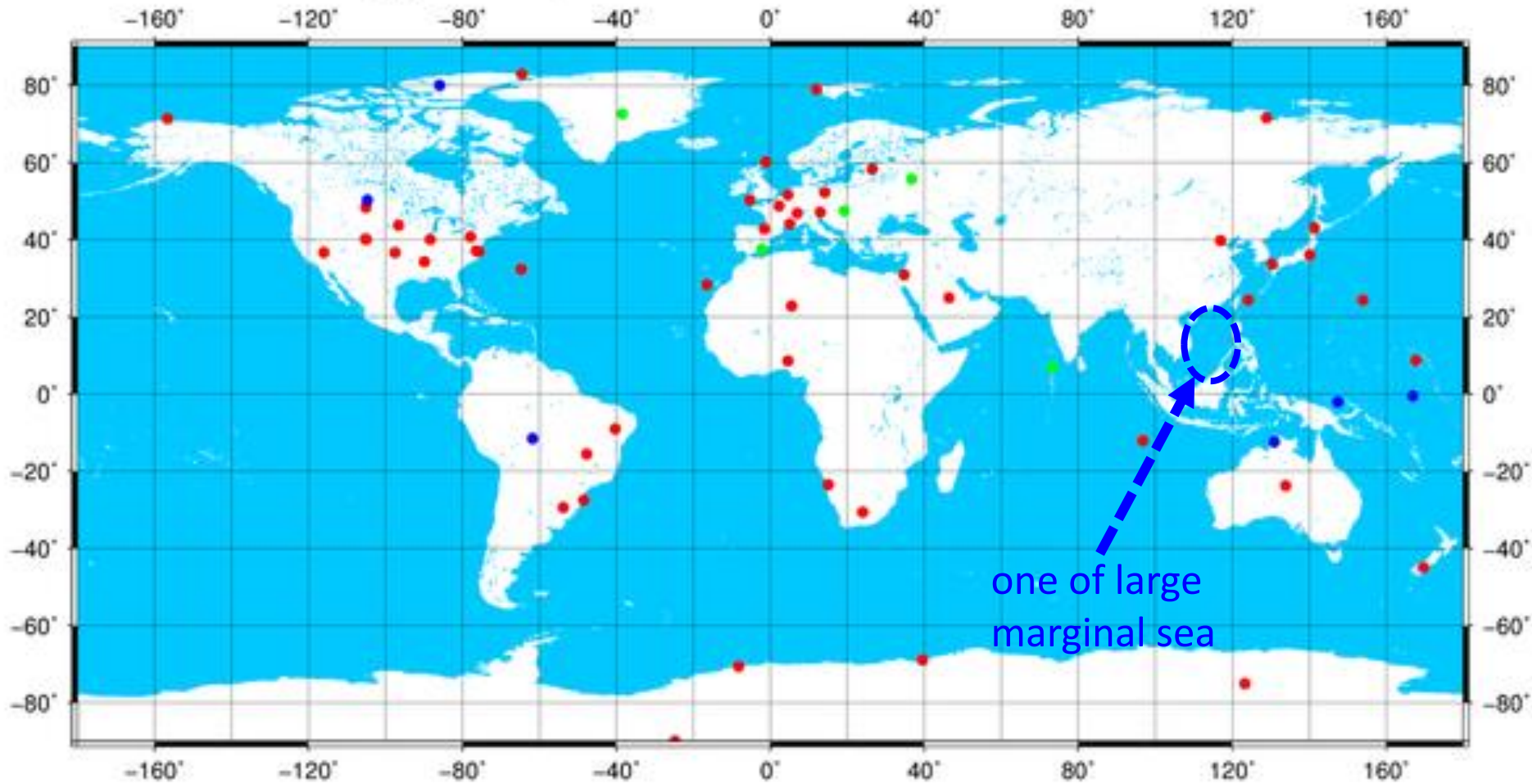
- 20 year commitment (how much data so far?)
- Downwelling rad measurements only
 - Tracker, K&Z Instruments, SW&LW
- Lots of ancillary measurements
 - Rich observational context
- Still need to work out calibration paradigm/process
- Locals can clean daily

New BSRN Sites Proposal

(Carlo Wang)

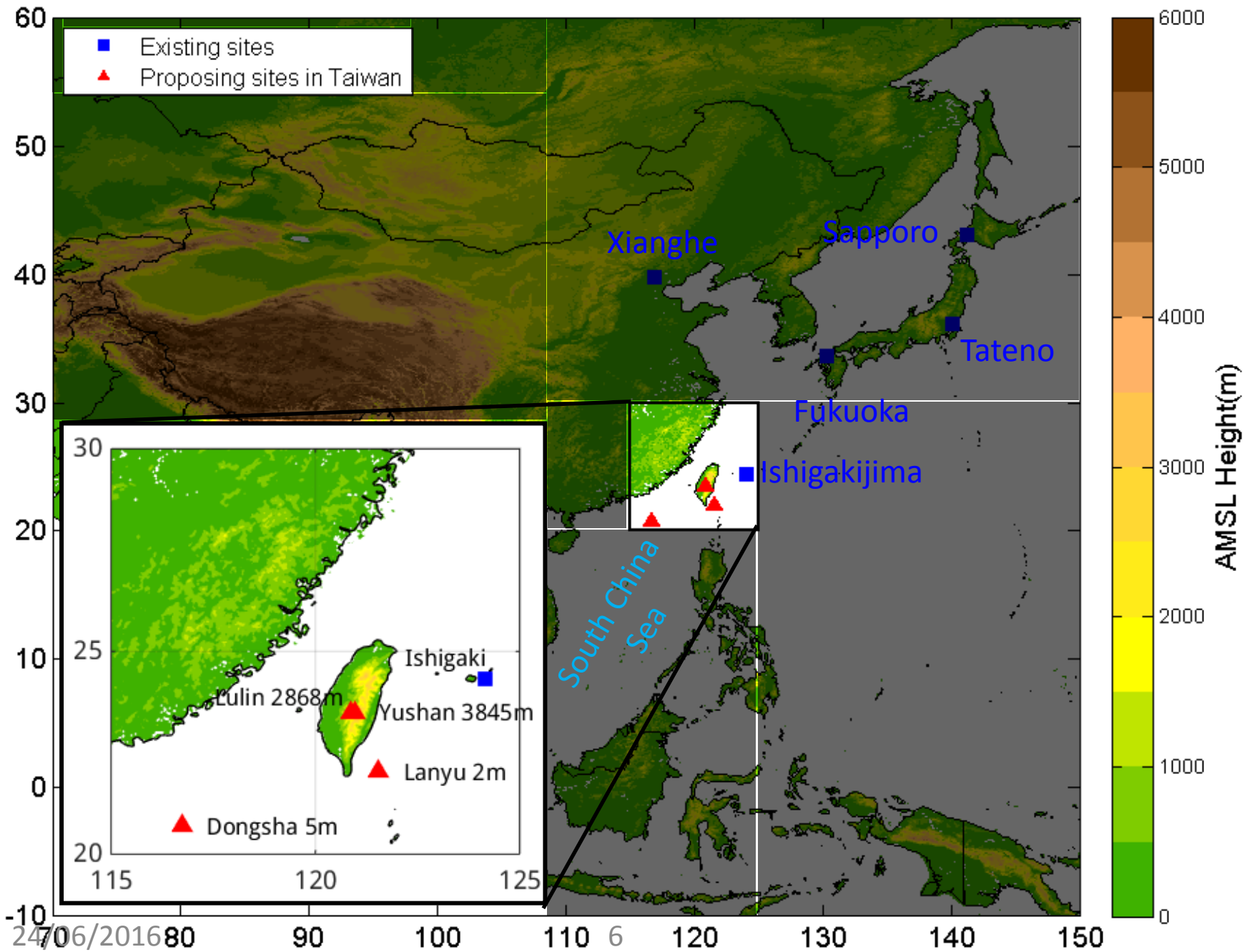
- 1. Lulin Atmospheric Background Station (2862 m)**
 1. Has tracker installed 2008, K&Z radiometers SW&LW down (not ventilated?, no upwelling?)
- 2. Yushan Meteorology Station (3845 m)**
 1. No tracker
- 3. Lanyu Meteorology Station (324 m)**
 1. No tracker
- 4. Dongsha Maritime Background Station (5 m)**
 1. Has tracker, K&Z radiometers SW&LW down (installed when? not ventilated?, no upwelling?)

Running, planned, and closed BSRN Stations, March 2015

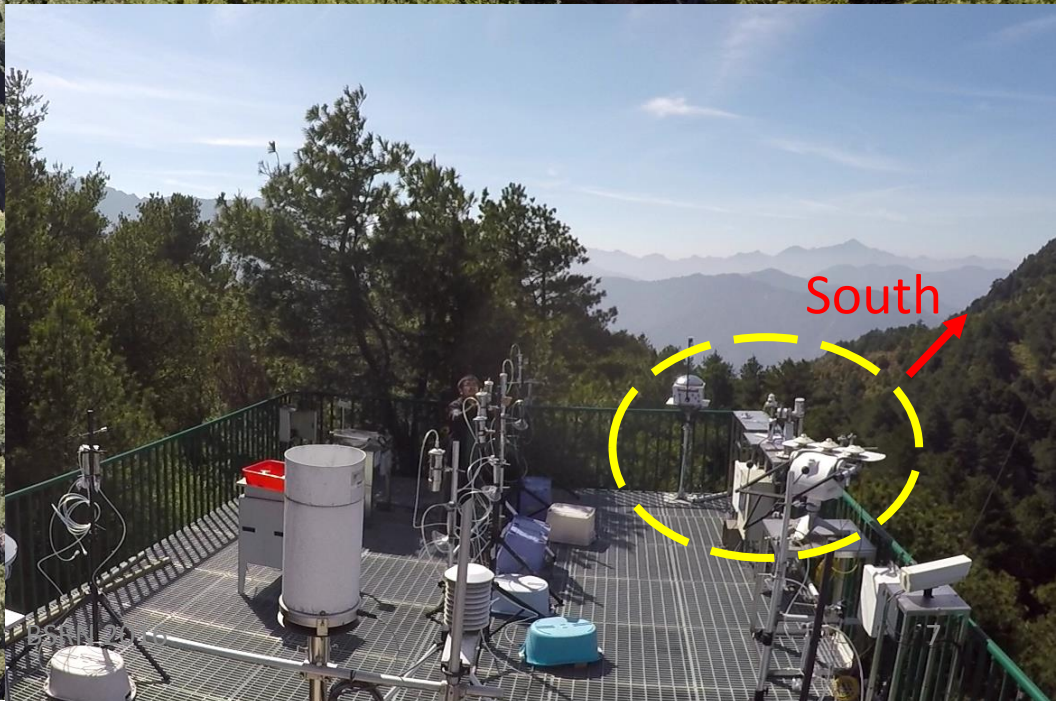
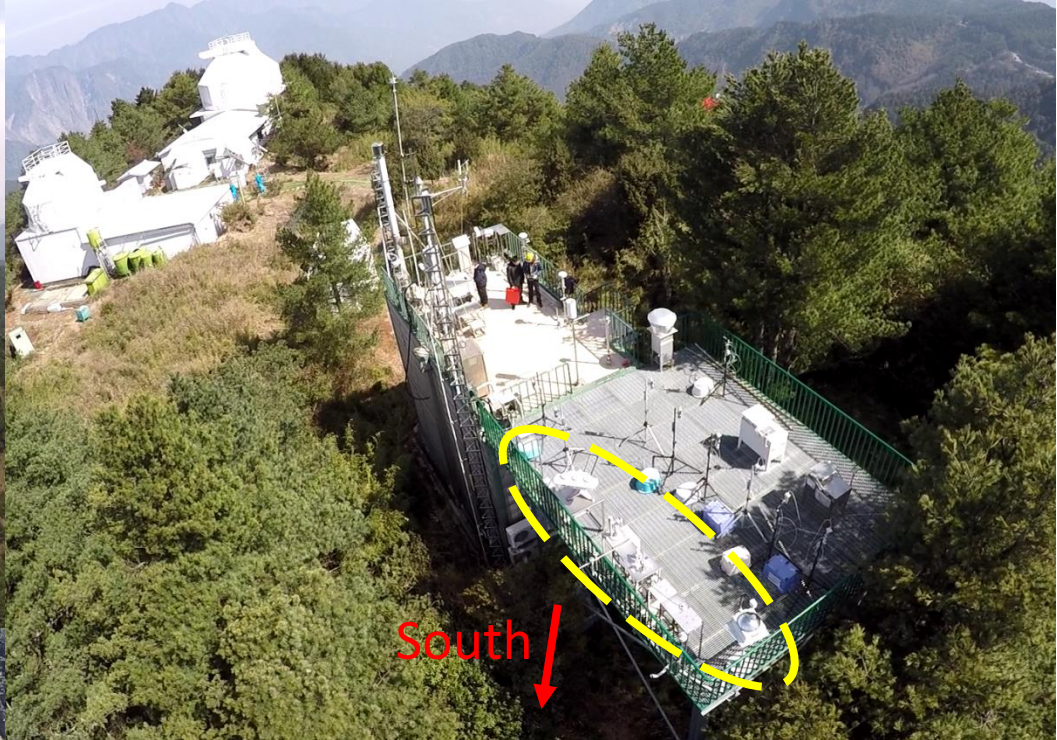


one of large
marginal sea

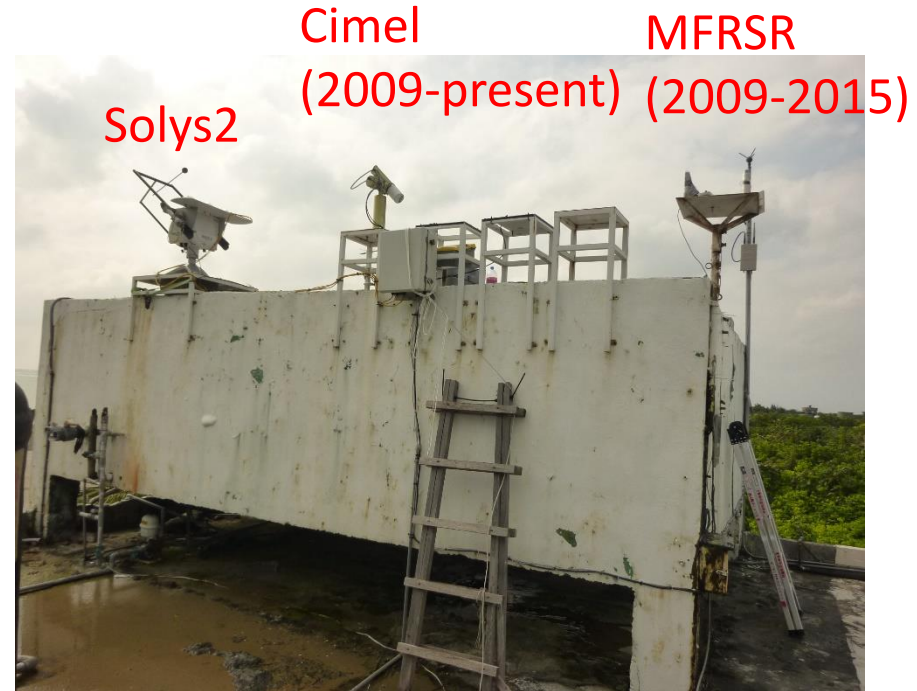
- Running Stations
- Planned Stations
- Closed Stations



Lulin Site



Dongsha Atoll (National Park) Platform and Instruments



Summary

Site	Elevation	maintenance	Instruments	Scientific Potentials
Lulin	2863 m	Unmanned station; weekly	Kipp&Zonen <i>Solys2, CMP21, CGR4, CHP1</i>	<ul style="list-style-type: none"> • Aerosol-radiation interaction in free troposphere
Yushan	3845 m	Manned station; daily	TBD <i>Proposed to be installed in 2017</i>	<ul style="list-style-type: none"> • Aerosol-radiation interaction in free troposphere • stratospheric volcanic aerosol and climate • Outdoor calibration research
Lanyu	324 m	Manned station; daily	TBD <i>Proposed to be installed in 2017</i>	<ul style="list-style-type: none"> • Radiation budget and typhoon genesis • Maritime environ. radiation
Dongsha	5 m	Manned station; weekly	Kipp&Zonen <i>Solys2, CMP21, CGR4, CHP1</i>	<ul style="list-style-type: none"> • Radiation budget over marginal sea • linkage with oceanography researches

Newcastle, Australia Site (Ben Duck)

- Tracker, downwelling SW&LW, no upwelling
- Newcastle site represents Australian coastal climate
- Active research in solar energy technologies means interest in accurate monitoring is maintained
- High quality instrumentation and data acquisition
- Over two years of data currently archived
- Experienced operations team
- Maintenance systems and data quality checking routines in place
- Additional measurements made on site for enriched dataset.
- Fairly urban location

Ground station views

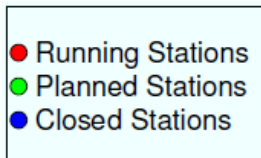
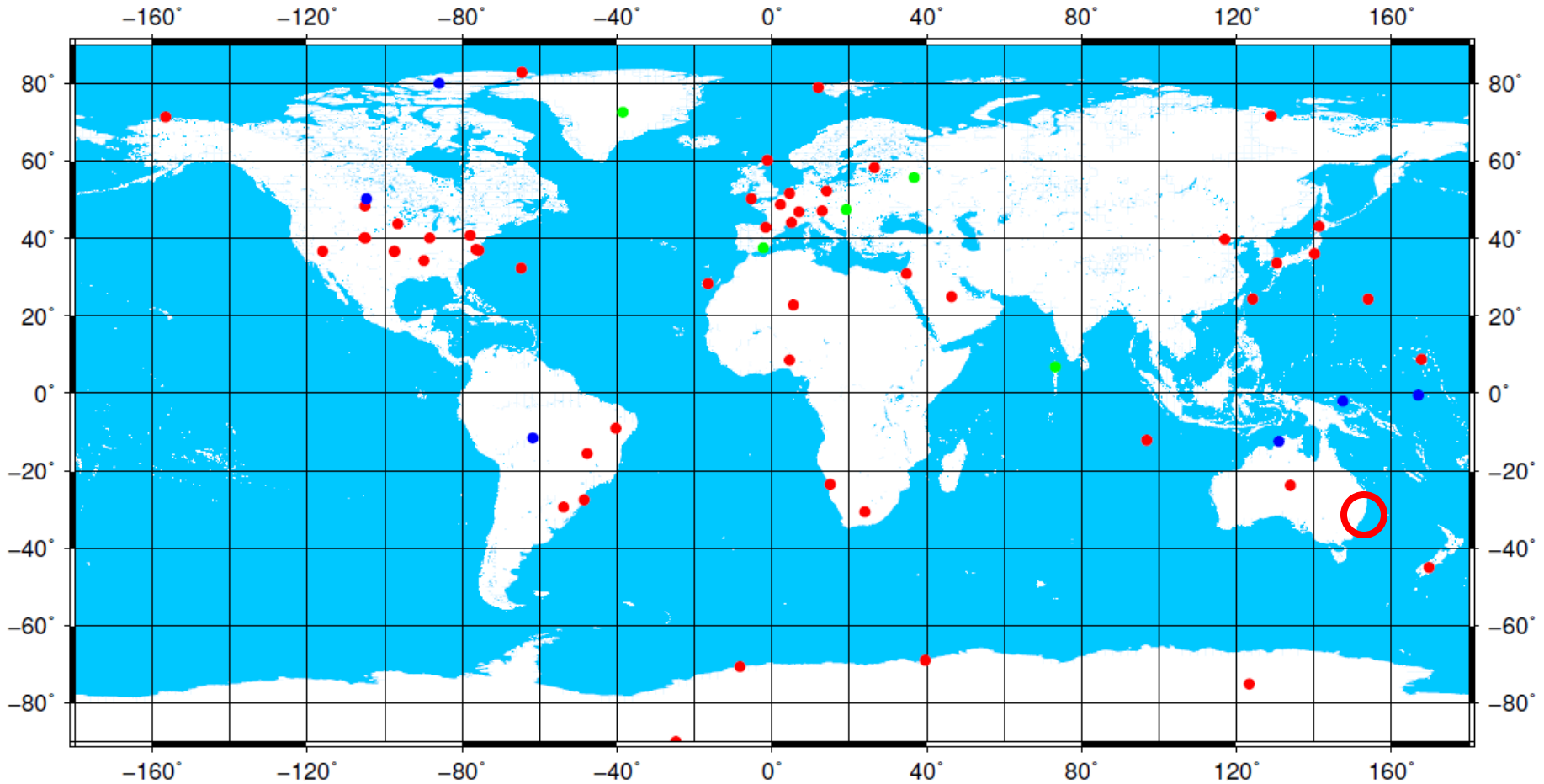


Geographical details of the site II



Site

Running, planned, and closed BSRN Stations, March 2015

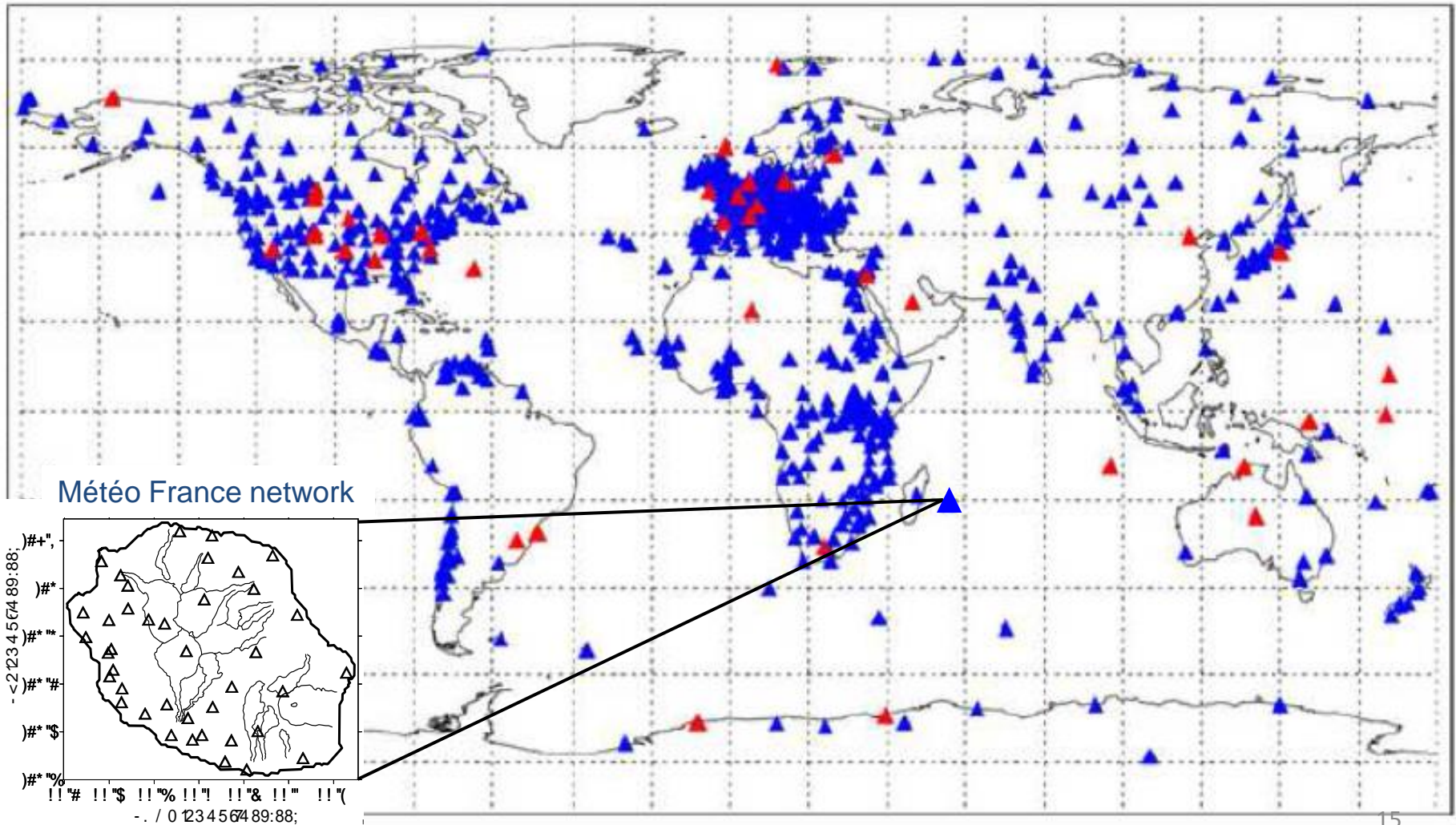


Réunion Island (Béatrice Morel)

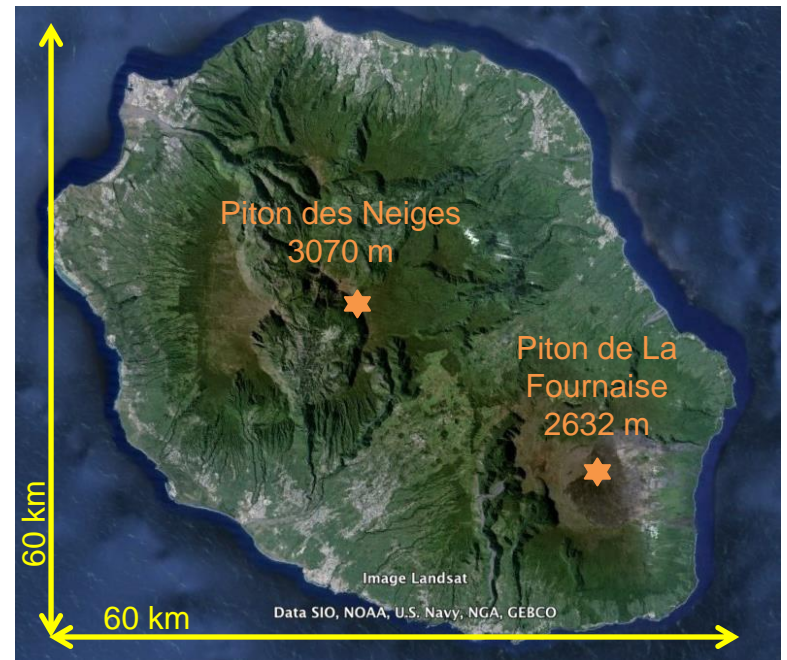
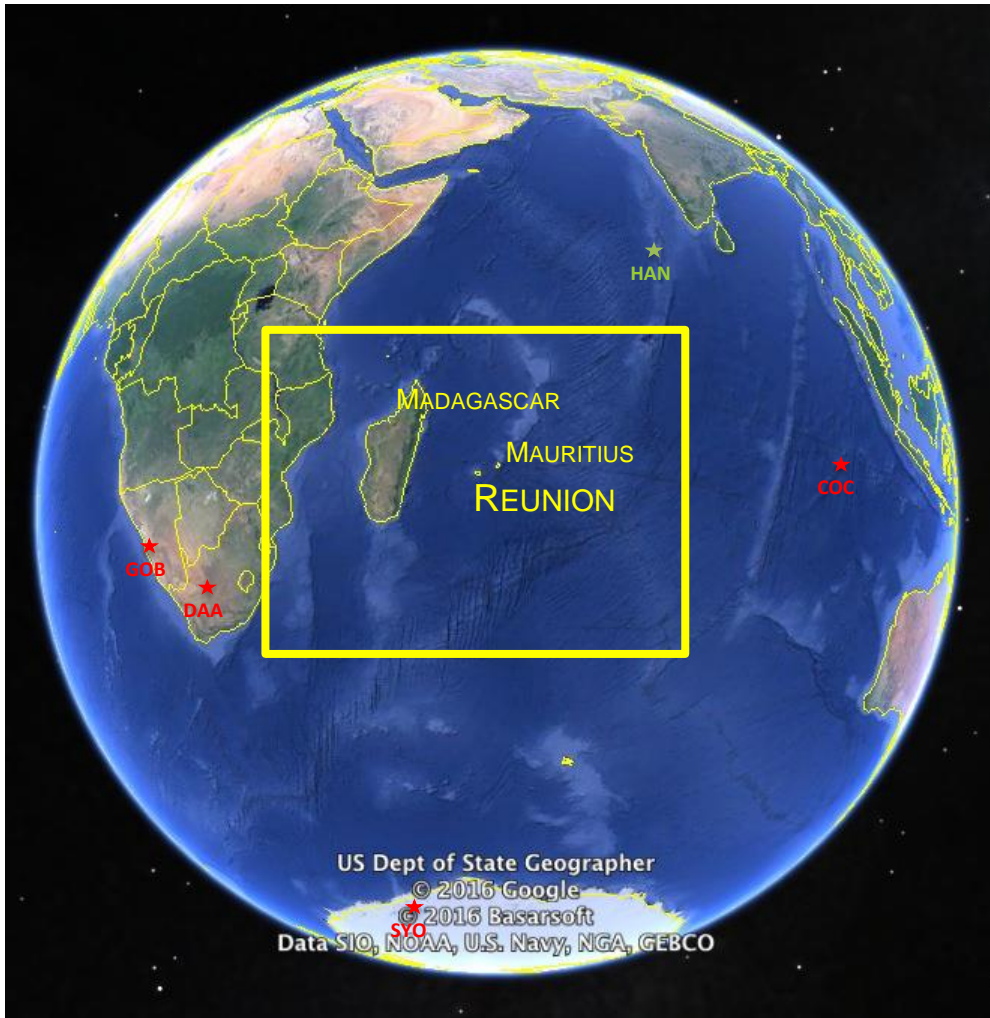
- Proposed measurement site at (21°8S;55.5°E) in a climatic zone not covered by existing operational sites
- Have tracker, downwelling SW, just started making measurements 2016
- Still need to install downwelling LW
- No upwelling measurements
- Proposed measurement site collocated with routine upper-air soundings and basic meteorological instrumentation (OPAR – Météo France)
- In urban surroundings
- Have calibrations efforts, (tied to world standards?)

Surface radiative fluxes observations

GEBA and BSRN observation sites (Wild et al. 2013)



Introduction



New BSRN site proposal



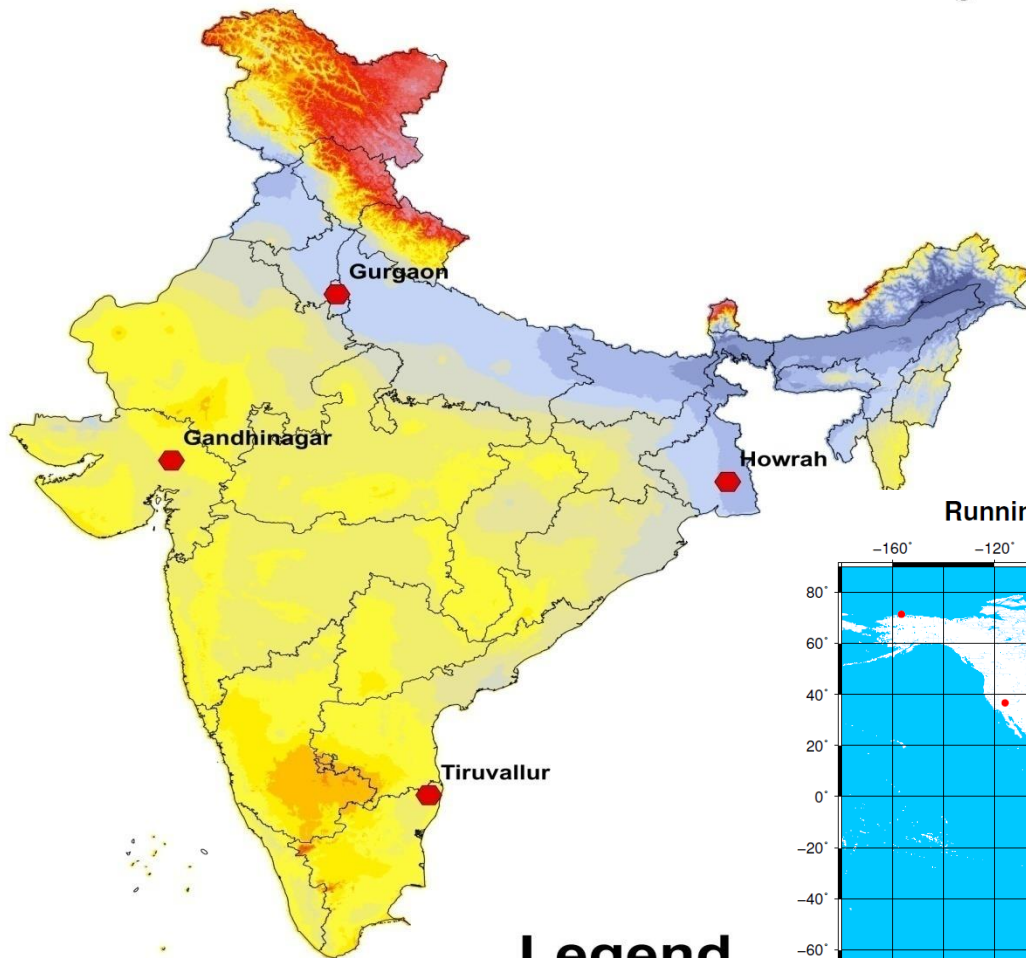
SW 7.4° 245° W 3.3° 295° NW N NE 65° E 115° SE 6.3°

SRRA Sites in India

(Karthik Ramanathan)

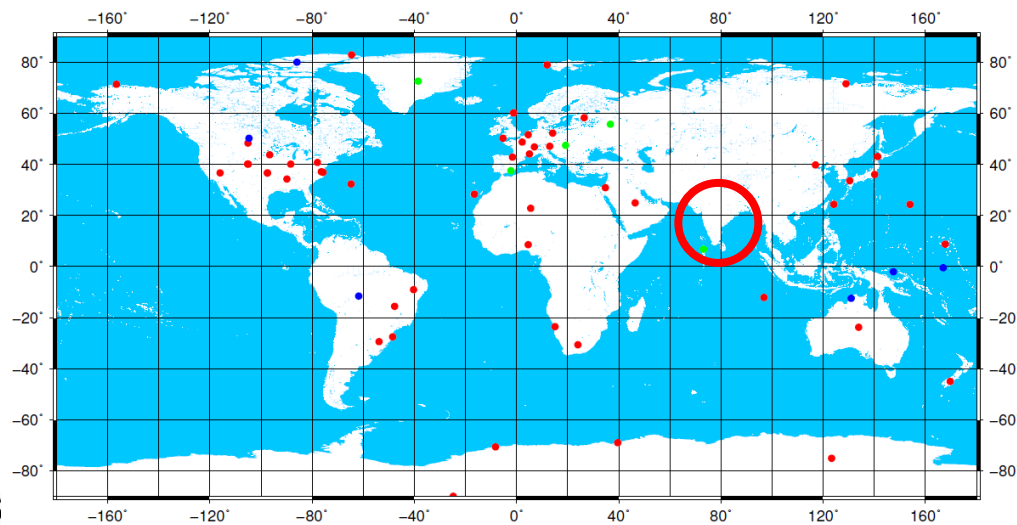
- Set up 4 SRRA Stations, out of 121, with additional sensors.
- All the sensors are traceable to the World Meteorological Organization (WMO) and World Radiometric Reference (WRR) with high accuracy to ensure the good quality of recorded data.
- Solar sensors are calibrated every 2 years in our calibration laboratory
- Measure the solar radiation (GHI, DNI & DHI) and metrological parameters (At all 4 sites?) (LW?)
- Solar powered, no ventilators
- No upwelling?
- How often cleaned?

Four Stations under BSRN



Sl. No.	State	Stations
1	Gujarat	1
2	Haryana	1
3	Tamil Nadu	1
4	West Bengal	1
Total		4




Running, planned, and closed BSRN Stations, March 2015



Legend

 Four S

 State E

 Running Stations
 Planned Stations
 Closed Stations

0 125 250 500 750 1,000 Km

Typical SRRA station

Ultrasonic Wind Sensor
(wind speed and wind
Direction)

GPS

Rain Gauge

Temp and RH
Sensor

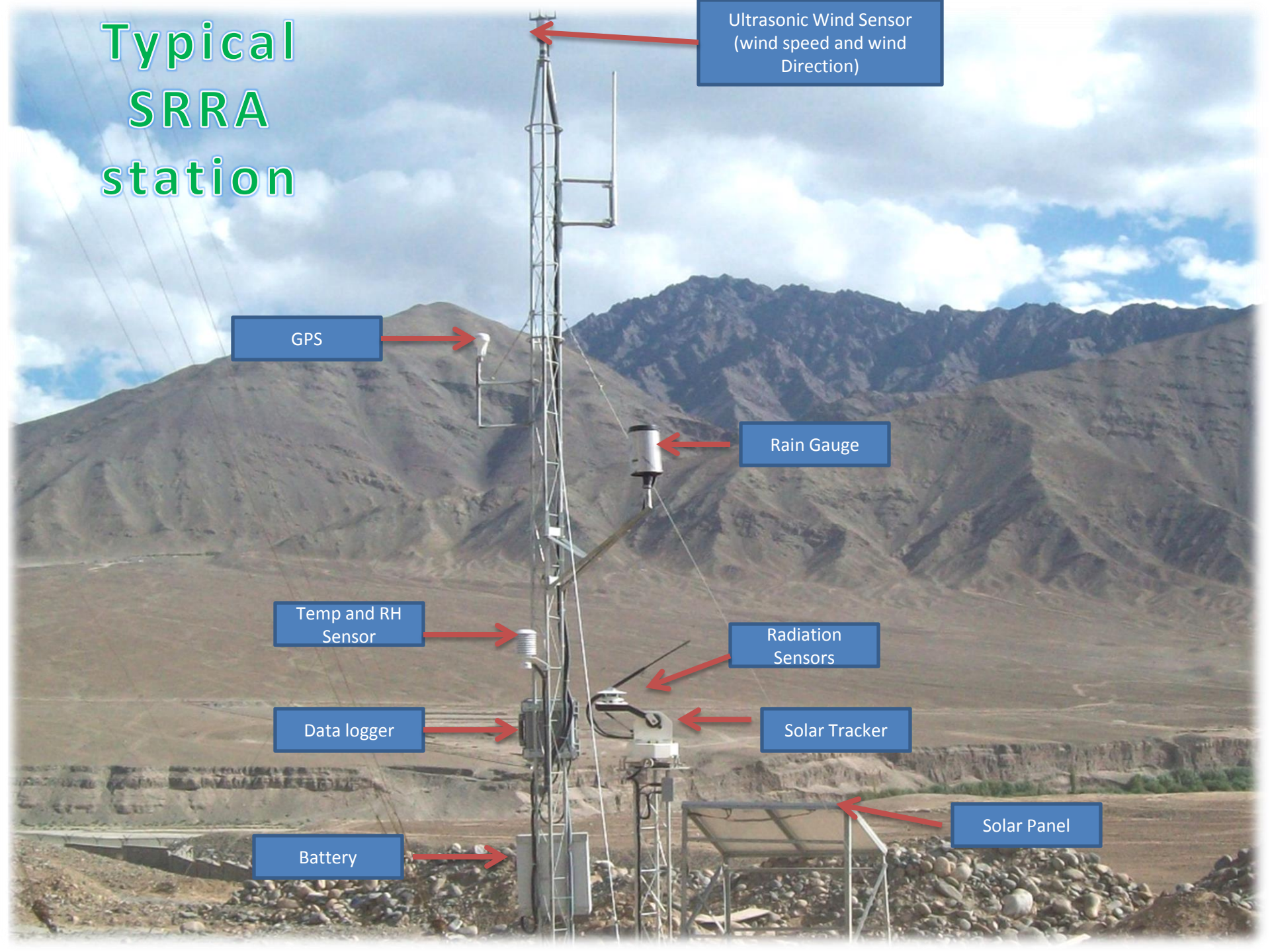
Radiation
Sensors

Data logger

Solar Tracker

Battery

Solar Panel





Howrah

West Bengal

22.55N 88.30E

Elev-51m

14/09/13



06/05/14



Sensors installed at field Station

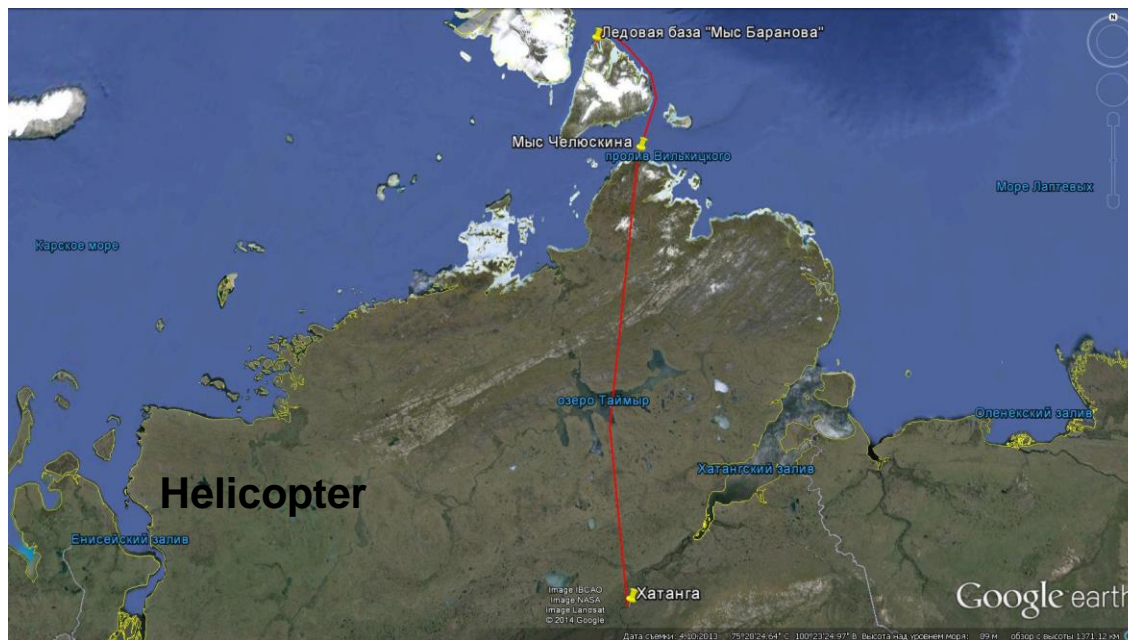
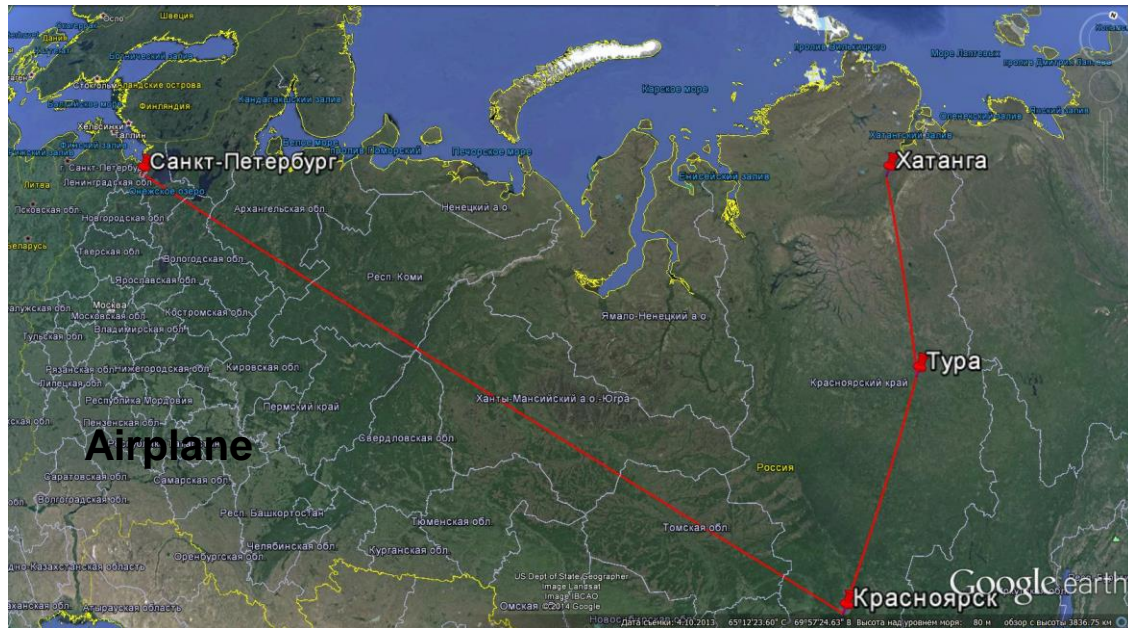
Sl. No	Instrument	Model & Make
1	Pyranometer	PSP, Eppley/Hukseflux Make
2	Pyranometer with Shade	PSP, Eppley/Hukseflux Make
2	Pyrheliometer	PSP, Eppley/Hukseflux Make
3	Solar Tracker System	Sun Tracker, Geonica
4	Rain Gauge	52203, R.M. Young
5	Wind Speed and Direction Sensors	Ultrasonic 85000, R.M. Young
6	Temperature Sensor	Model 41382VC ,R.M. Young
7	Relative Humidity Sensor	
8	Pressure Sensor	61302 L , R.M. Young

LW Measured? List Pyrgeometer-Hukseflux-IR20?

Cape Baranova (Vasili Kustov)

- 79N, 101E
- Tracker, downwelling SW & LW
- Upwelling?
- Lots of ancillary measurements, embedded in rich context.
- Opened June 2013, begin May 2014?
- Calibrations and operations (daily service?)?

The route from Saint Petersburg to "Ice Base Cape Baranov"



Observations and studies beginning May 2014



Standard meteorological observations

Standard and advanced solar radiation observations

Route surveys of spectral albedo

Upper-air observations

Monitoring of greenhouse gases

Heat balance observations

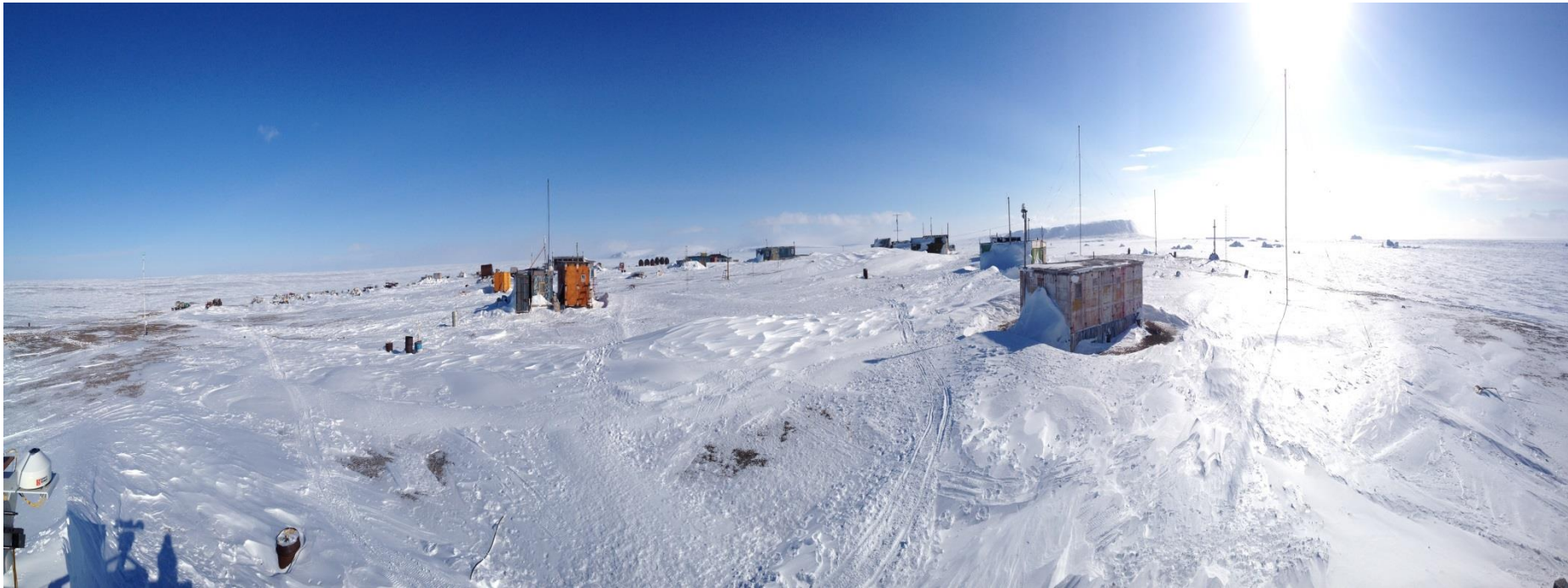
Studies of physical - mechanical properties of fast ice

Testing of new devices for measurements of freshwater and sea ice thickness

Oceanographic investigations in the Shokalski Strait

Organization of polygon for glaciological investigations at the glacier Mushketov

Hydrological studies



Sites and Data Issues

Candidate sites, no data

- Provisionally accepted, assigned site number
 - Budapesht
 - Zvenigrad
- Candidate
 - Greenland Summit
 - Honimaadhoo (Maldives)
 - Platforma Solar de Almeria (Spain)

I move: drop these. If in future we hear from them, they can do new site proposals

Data in Arrears

- How long before we need to take action for stations who are years behind in data submission?
- What action(s) to take?

Strawman proposal:

- **Once 3 (2?) years behind contact Station Scientist to determine situation**
- **Give 1 year to get data submission caught up**
- **At 4 (3) years contact again**
- **If no confidence in correcting, then declare site...What? (Inactive? Default? What?)**
- **Color code sites map?**