



Selegua, a proposed new BSRN site in the south of Mexico

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Outline

- Solar Radiation Observatory
- Mexican Solarimetric Network
- Proposed station
- Future work

Solar Radiation Observatory

- More than 30 years of experience in the process of measuring solar radiation in Mexico
- Regional Center for the Measurement of Solar Radiation IV Region WMO (Central America, North America and the Caribbean)
- Mexican Solarimetric Service



OBSERVATORIO DE RADIACION SOLAR
Centro Radiométrico Regional AR-IV



Solar Radiation Observatory

- 2 Absolute cavity radiometers
Eppley and PMOD
(reference to the World Radiometric Reference)
- 1 Dobson Spectrophotometer No. 98 (World Ozonometric Network)
- 3 Spectrophotometers (Aerosol Robotic Network)



Mexican Solarimetric Network



Mexican Centre of Innovation in Solar Energy (CEMIESol)
2014 –Present

Project 16 “National Solar Resource Inventory”

Mexican Solarimetric Network

Goals

- Generate reliable solarimetric information to be used with satellite models images for the evaluation of the solar energy resource.
- Create a national network of solarimetric reference stations (12 main station and 2 complementary stations).
- Generate a solarimetric and meteorological database with a temporal resolution of 1 min.
- Generate valuable information on solar energy available for the use of solar energy technologies.

Mexican Solarimetric Network



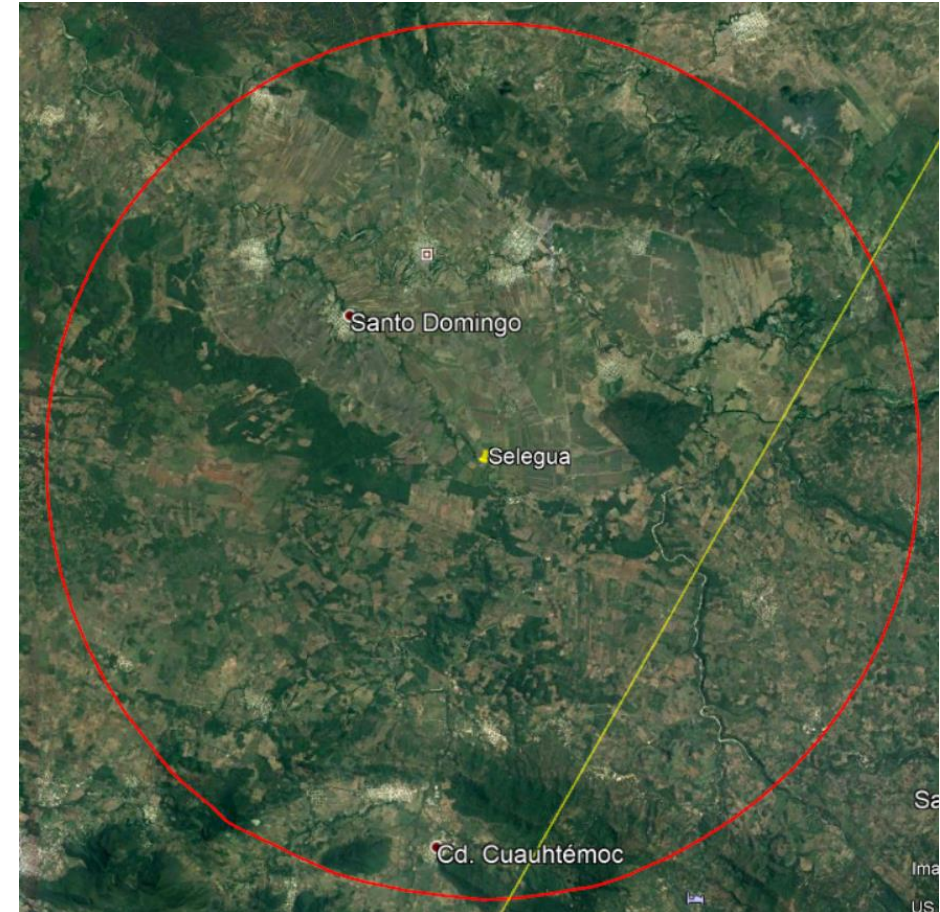
Parameter	Instrument	Model
Solar tracker	Tracker	Solys2, Kipp&Zonen
Global solar radiation	Pyranometer	CMP11 Kipp&Zonen
Diffuse solar radiation	Pyranometer	CMP11 Kipp&Zonen
Solar global radiation reflected	Pyranometer	CMP11 Kipp&Zonen
Solar global radiation tilted to the latitude	Pyranometer	CMP11 Kipp&Zonen
Normal solar radiation	Pyrheliometer	CHP1 Kipp&Zonen
Long wave radiation downwelling	Pyrgeometer	CGR4 Kipp&Zonen
Long wave radiation upwelling	Pyrgeometer	CGR4 Kipp&Zonen
PAR radiation	Quantum sensor	PQS1 Licor
Global illuminance	Photometer	LI-210 Licor
Diffuse illuminance	Photometer	LI-210 Licor
UVB	Biometer	501A, SolarLight
Meteorology (Air temperature, humidity, speed and direction wind and atmospheric pressure)		

Proposed station

SELEGUA

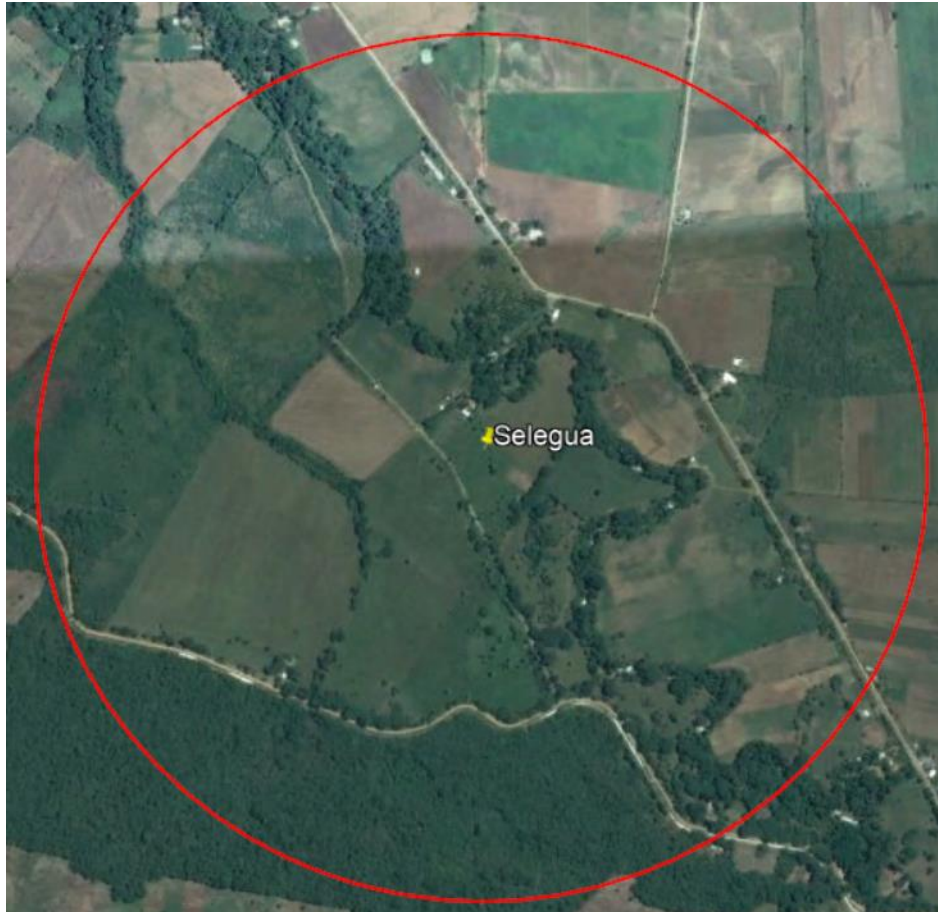
- Latitude: 15°47'2.46" N
- Longitude: 91°59'24.63" W
- Elevation: 602 (MSL)
- Local Time GMT -06
- Topography Type: Flat, Rural
- Surface Type: grass)

Station manager: Roberto Bonifaz Ph. D,
e-mail bonifaz@unam.mx



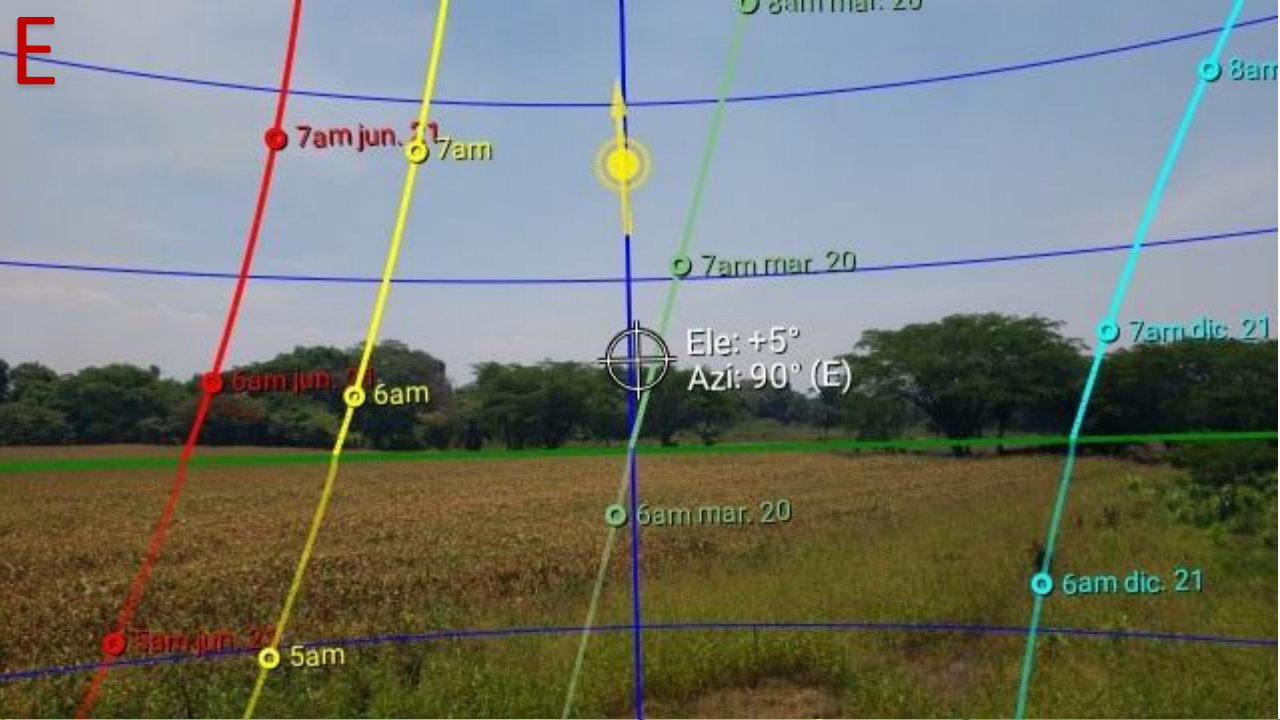
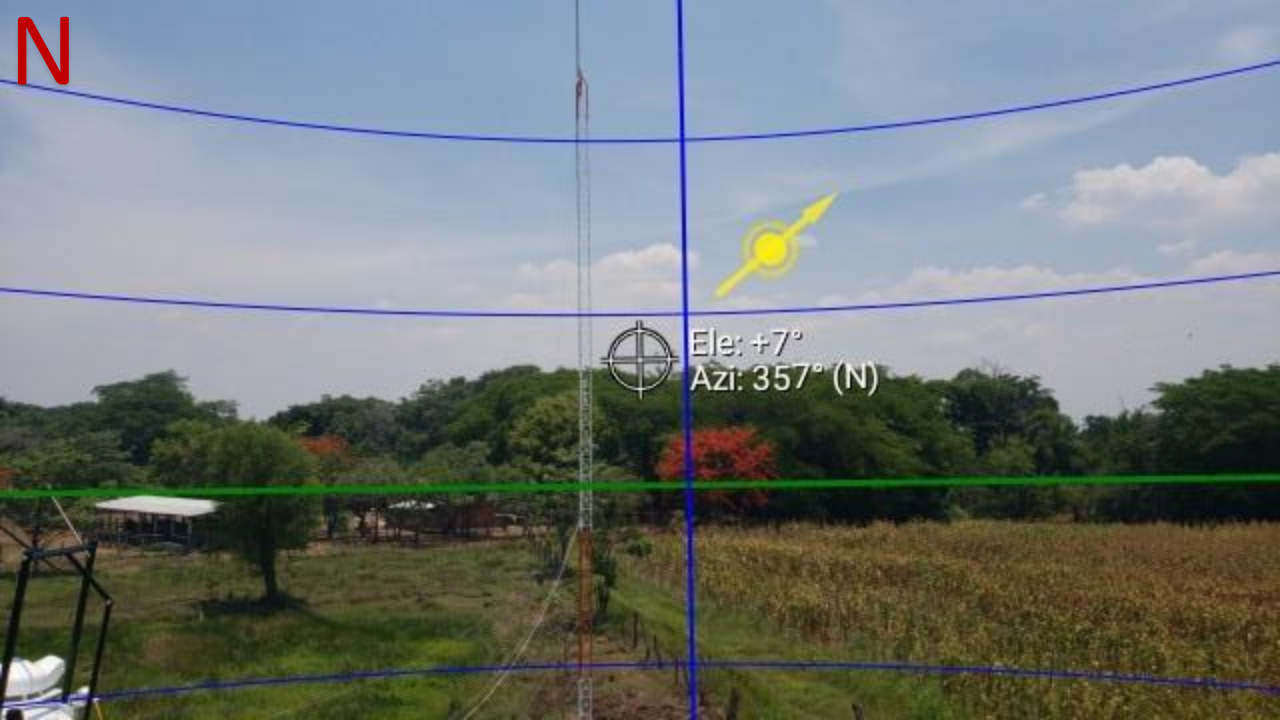
Platform

November 2017

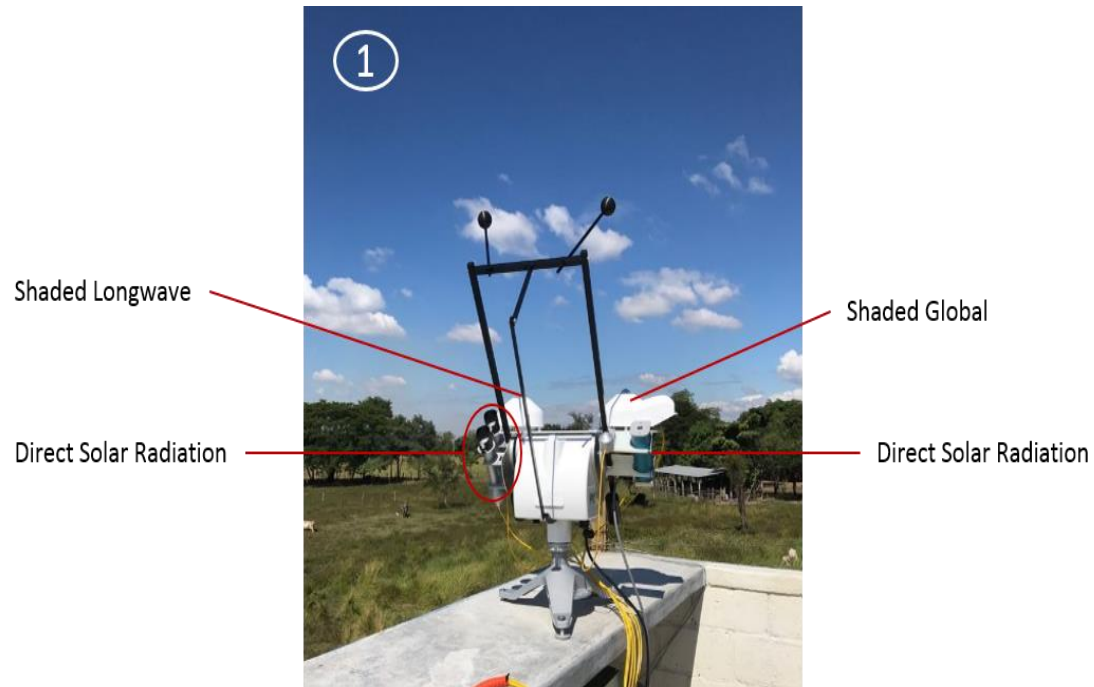


Horizon



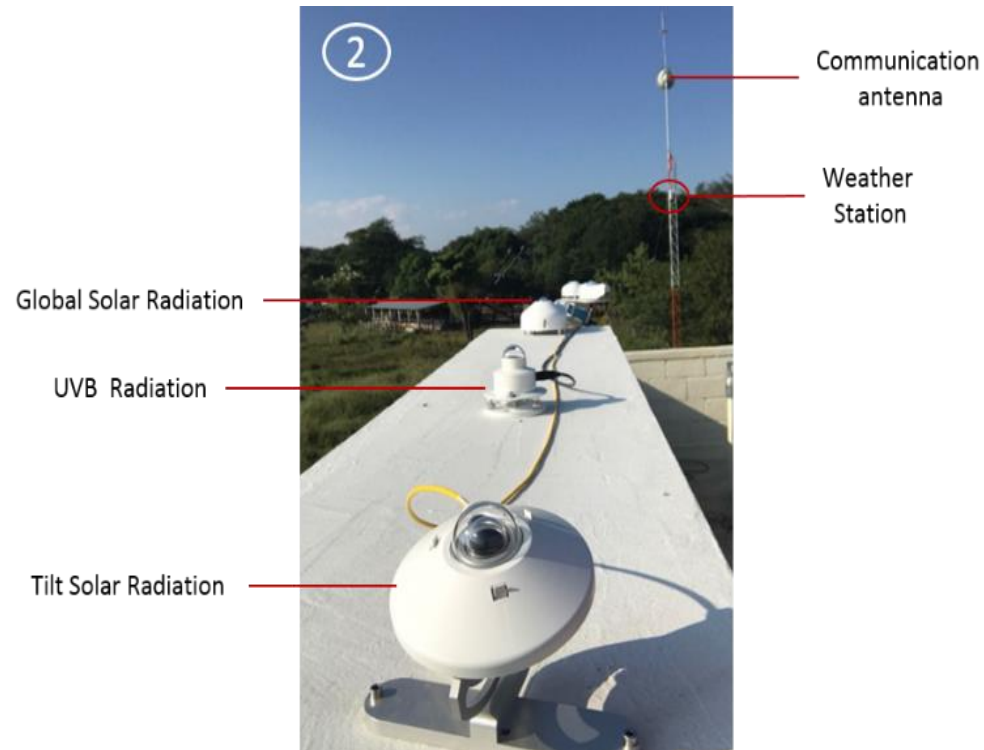


Instrumentation



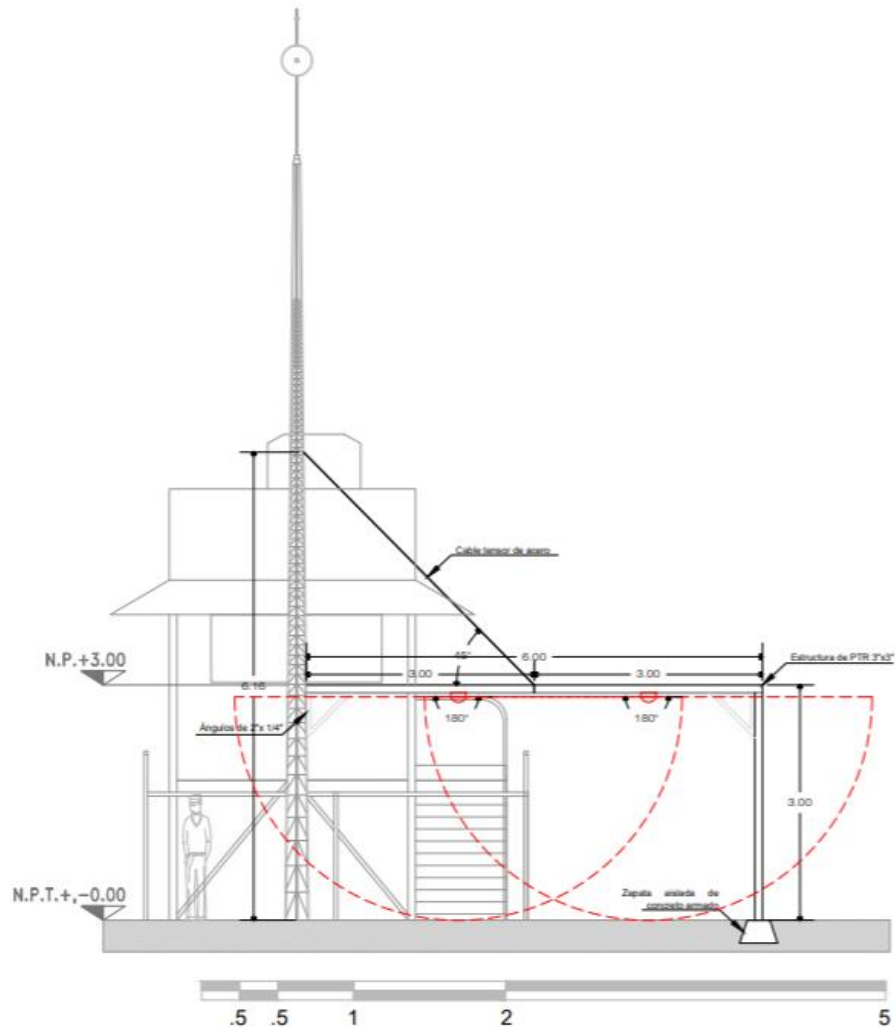
- Sun Tracker (Kipp & Zonen Solys2)
- Absolute cavity radiometer PMOD/WRC
- Kipp & Zonen CHP1 Pyrheliometer
- Kipp & Zonen CHP1 Pyrheliometer
- Kipp & Zonen CMP22 Pyranometer with ventilation unit (diffuse solar radiation)
- Kipp & Zonen CGR4 Pyrgiometer with ventilation unit (long wave radiation downwelling)

Instrumentation



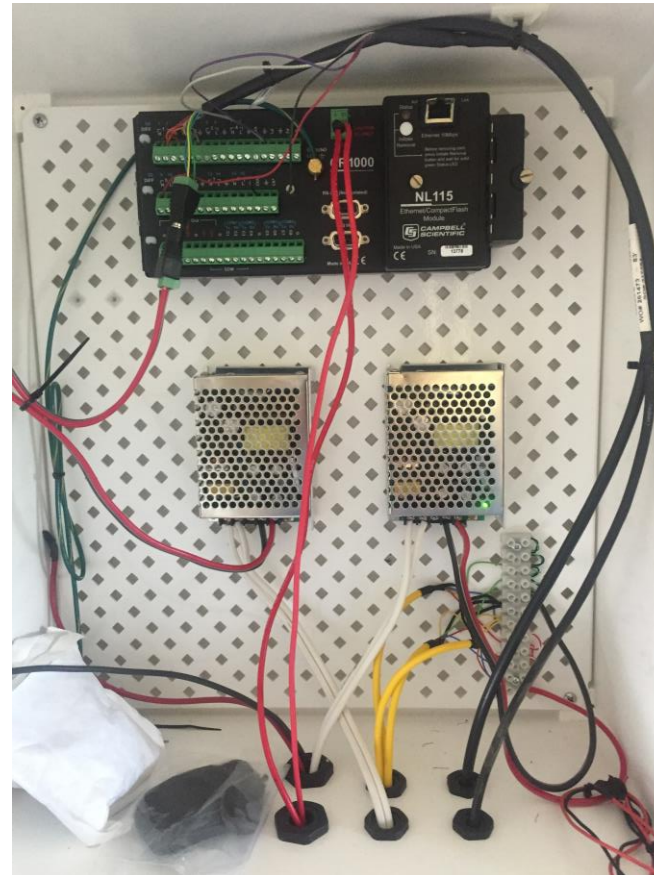
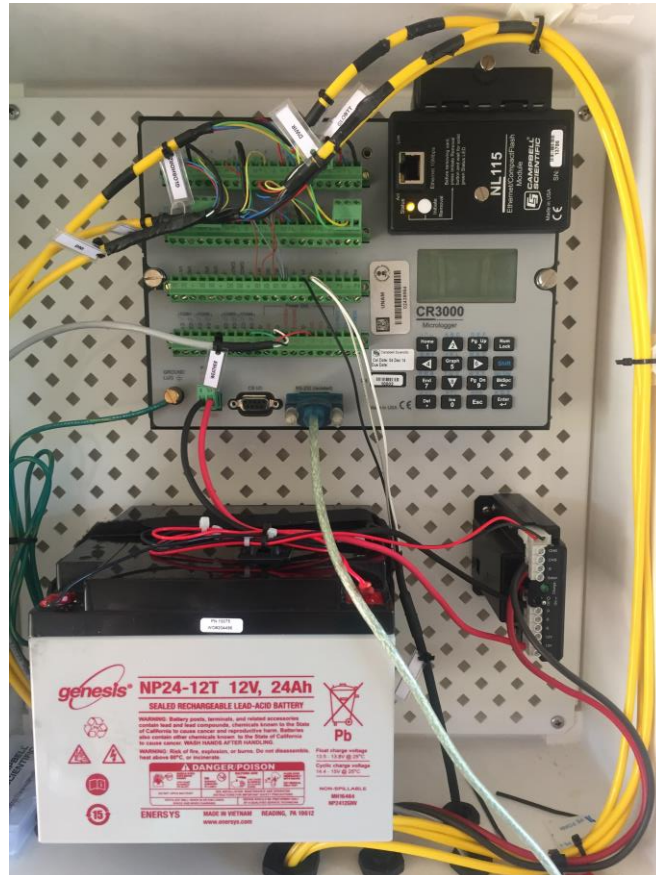
- Gill GMX500 Compact Weather Station
- Kipp & Zonen CMP22 Pyranometer with ventilation unit (global solar radiation)
- Kipp & Zonen CMP11 Pyranometer (tilt solar radiation)
- Solar Light 501A (UVB radiation)

Instrumentation



- Kipp & Zonen CGR4 Pyrgiometer
(long wave radiation upwelling)
- Kipp & Zonen CMP22 Pyranometer
(solar global radiation reflected)

Datalogging



2 Micrologger CampbellSci
Sampling frequency 1Hz

Maintenance is done daily by the station manager, the main activities are:

- General inspection of the instruments
- Domes cleaning
- Horizontally instruments leveling
- Pyrheliometer alignment
- Logger operation cheking
- Data QA/QC

Future work

- Semi-annual and annual maintenance implementation
- Install a spectrophotometer CIMEL

Thank you



Questions?