The World Radiation Monitoring Center at the Alfred-Wegener-Institut

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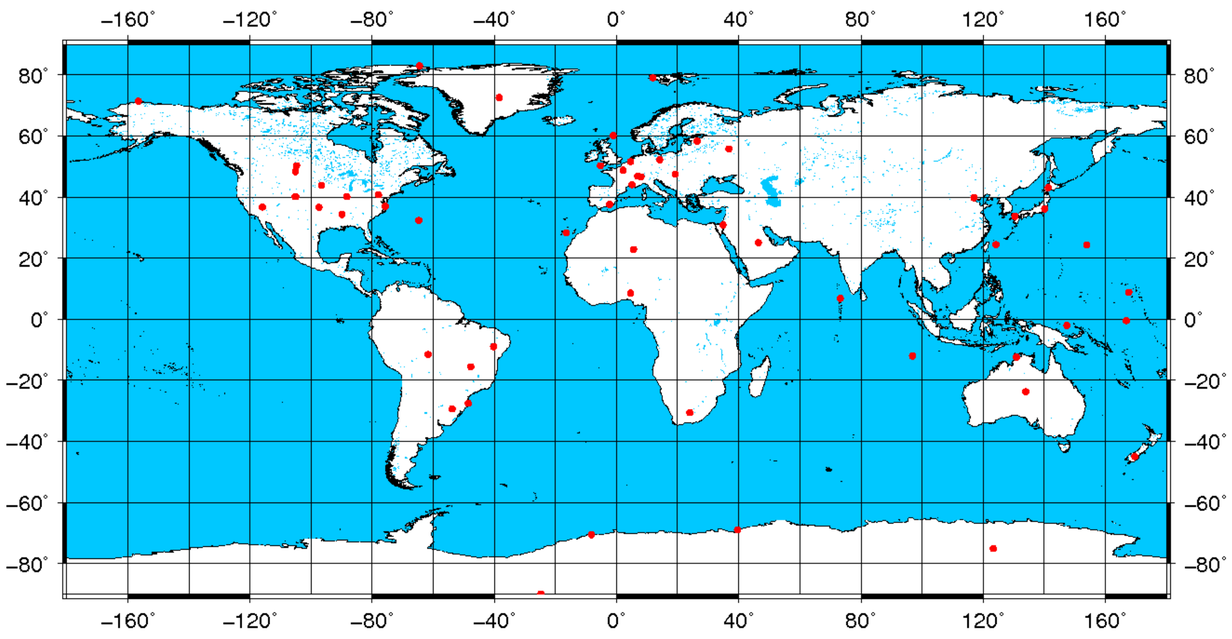
Objectives of the WRMC

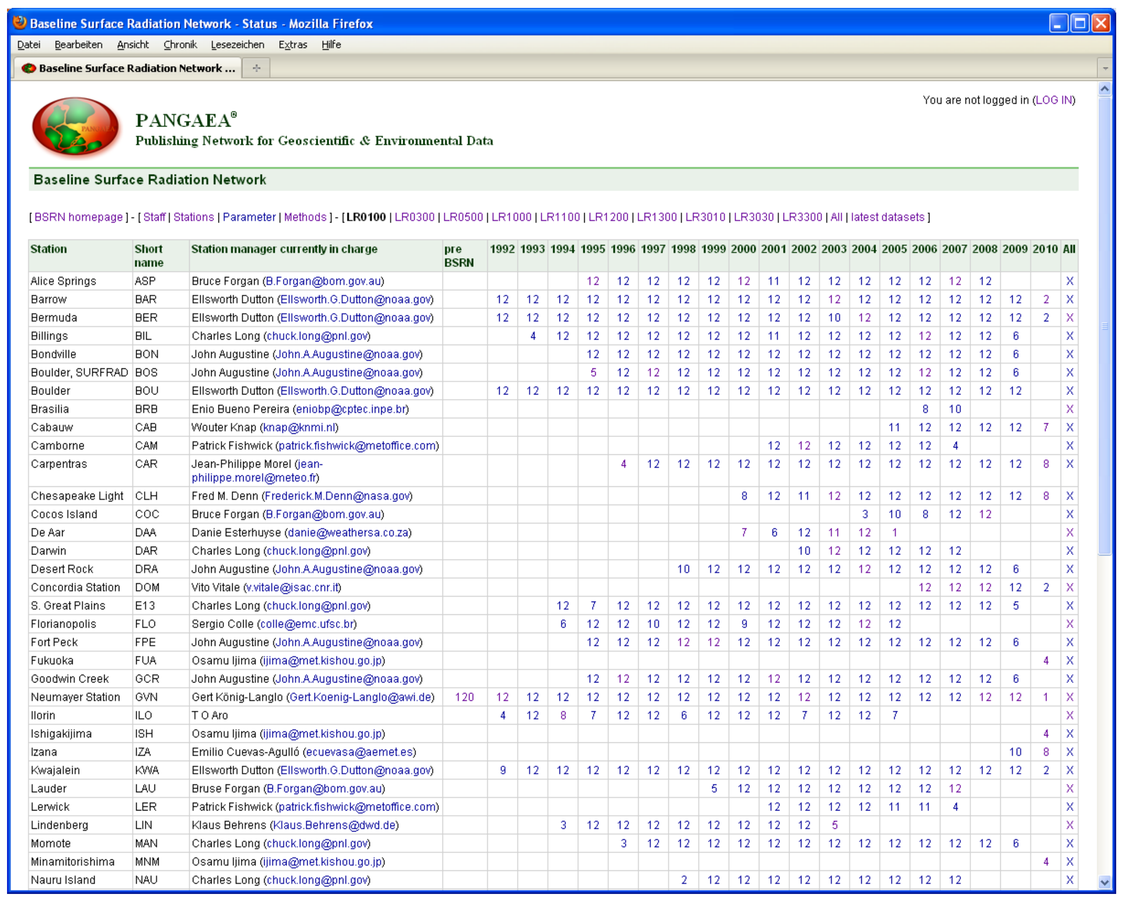
In 1992, the World Climate Research Programme (WCRP) initiated the Baseline Surface Radiation Network (BSRN) and its central archive called World Radiation Monitoring Center (WRMC).

The objective of the WRMC is to provide observations of the best possible quality, for short and long-wave surface radiation fluxes. The uniform and consistent measurements throughout the BSRN network are used to:

1. monitor the background short and long-wave radiative components and their changes with the best methods currently available,
2. provide data for the validation and evaluation of satellite-based estimates of the surface radiative fluxes and
3. produce high-quality observational data for comparisons with climate model (GCM) calculations and for the development of local regionally representative radiation climatologies.



Active BSRN-stations and candidates in 2010



Station	Short name	Station manager currently in charge	pre BSRN	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	All
Alice Springs	ASP	Bruce Forgan (B.Forgan@bom.gov.au)					12	12	12	12	12	12	11	12	12	12	12	12	12	12			X
Barrow	BAR	Ellsworth Dutton (Ellsworth.G.Dutton@noaa.gov)		12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	2	X
Bermuda	BER	Ellsworth Dutton (Ellsworth.G.Dutton@noaa.gov)		12	12	12	12	12	12	12	12	12	12	12	10	12	12	12	12	12	12	2	X
Billings	BIL	Charles Long (chuck.long@pnl.gov)				4	12	12	12	12	12	12	11	12	12	12	12	12	12	12	6		X
Bondville	BON	John Augustine (John.A.Augustine@noaa.gov)					12	12	12	12	12	12	12	12	12	12	12	12	12	12	6		X
Boulder, SURFRAD	BOS	John Augustine (John.A.Augustine@noaa.gov)					5	12	12	12	12	12	12	12	12	12	12	12	12	12	6		X
Boulder	BOU	Ellsworth Dutton (Ellsworth.G.Dutton@noaa.gov)		12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12		X
Brasilia	BRB	Enio Bueno Pereira (eniobp@cptec.inpe.br)																8	10				X
Cabauw	CAB	Wouter Knap (knap@knmi.nl)																11	12	12	12	7	X
Camborne	CAM	Patrick Fishwick (patrick.fishwick@metoffice.com)											12	12	12	12	12	12	4				X
Carpentras	CAR	Jean-Philippe Morel (jean-philippe.morel@meteo.fr)						4	12	12	12	12	12	12	12	12	12	12	12	12	12	8	X
Chesapeake Light	CLH	Fred M. Denn (Frederick.M.Denn@nasa.gov)										8	12	11	12	12	12	12	12	12	12	8	X
Cocos Island	COC	Bruce Forgan (B.Forgan@bom.gov.au)														3	10	8	12	12			X
De Aar	DAA	Danie Esterhuyse (danie@weathersa.co.za)										7	6	12	11	12	1						X
Darwin	DAR	Charles Long (chuck.long@pnl.gov)												10	12	12	12	12	12				X
Desert Rock	DRA	John Augustine (John.A.Augustine@noaa.gov)								10	12	12	12	12	12	12	12	12	12	12	6		X
Concordia Station	DOM	Vito Vitale (v.vitale@isac.cnr.it)																12	12	12	12	2	X
S. Great Plains	E13	Charles Long (chuck.long@pnl.gov)				12	7	12	12	12	12	12	12	12	12	12	12	12	12	12	5		X
Florianopolis	FLO	Sergio Colle (colle@emc.ufsc.br)				6	12	12	10	12	12	9	12	12	12	12	12						X
Fort Peck	FPE	John Augustine (John.A.Augustine@noaa.gov)					12	12	12	12	12	12	12	12	12	12	12	12	12	12	6		X
Fukuoka	FUA	Osamu Ijima (ijima@met.kishou.go.jp)																				4	X
Goodwin Creek	GCR	John Augustine (John.A.Augustine@noaa.gov)					12	12	12	12	12	12	12	12	12	12	12	12	12	12	6		X
Neumayer Station	GVN	Gert König-Langlo (Gert.Koenig-Langlo@awi.de)	120	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	1	X
Ilorin	ILO	T O Aro		4	12	8	7	12	12	6	12	12	12	7	12	12	7						X
Ishigakijima	ISH	Osamu Ijima (ijima@met.kishou.go.jp)																				4	X
Izana	IZA	Emilio Cuevas-Agulló (ecuevasa@aemet.es)																			10	8	X
Kwajalein	KWA	Ellsworth Dutton (Ellsworth.G.Dutton@noaa.gov)		9	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	2	X
Lauder	LAU	Bruse Forgan (B.Forgan@bom.gov.au)									5	12	12	12	12	12	12	12	12				X
Lerwick	LER	Patrick Fishwick (patrick.fishwick@metoffice.com)											12	12	12	12	11	11	4				X
Lindenberg	LIN	Klaus Behrens (Klaus.Behrens@dwd.de)				3	12	12	12	12	12	12	12	12	5								X
Momote	MAN	Charles Long (chuck.long@pnl.gov)						3	12	12	12	12	12	12	12	12	12	12	12	12	6		X
Minamitorishima	MNM	Osamu Ijima (ijima@met.kishou.go.jp)																				4	X
Nauru Island	NAU	Charles Long (chuck.long@pnl.gov)								2	12	12	12	12	12	12	12	12					X

Web based data retrieval via PANGAEA

Available datasets

The typical average interval for radiation data is 1 minute. All data can be retrieved interactively by any registered scientist from a ftp-server and the Publishing Network for Geoscientific & Environmental Data PANGAEA (http://www.pangaea.de/search?q=BSRN)

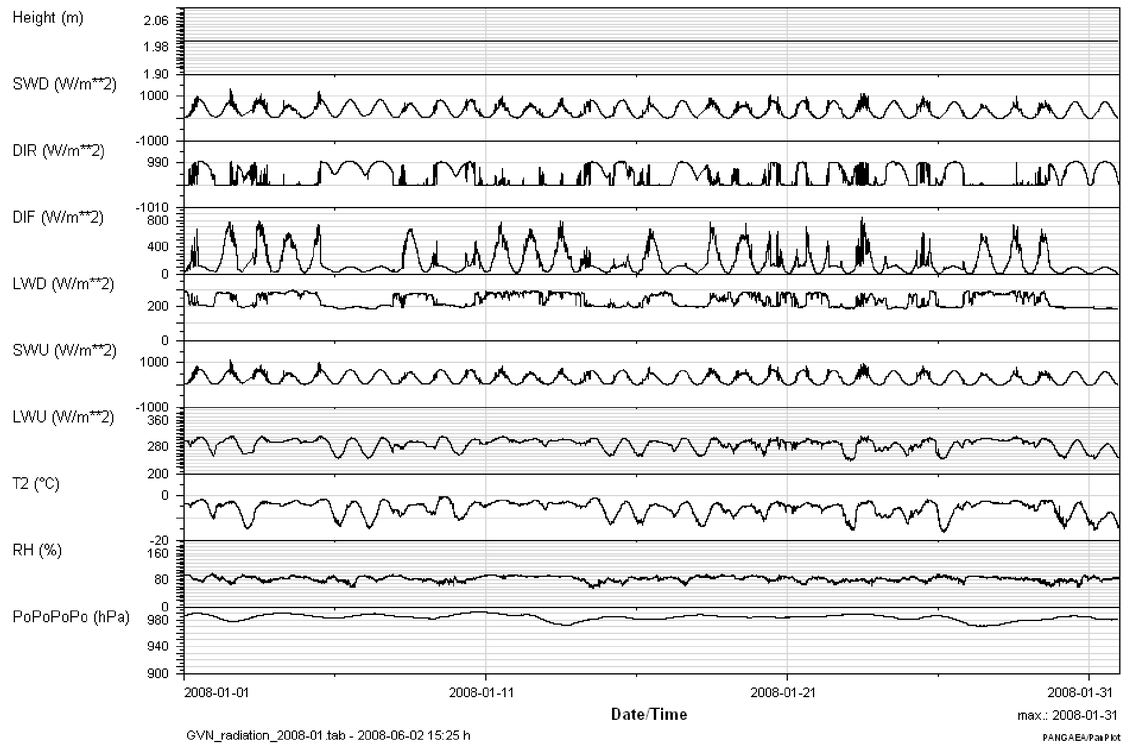
The parameters within the archive files are given below:

Global, Diffuse, Direct, Long-wave down	51 stations	5835 months
Reflex, Long-wave up	9 stations	1521 months
UV	12 stations	1456 months
Synoptic observations	9 stations	1309 months
Upper air soundings	29 stations	3038 months
Total ozone	9 stations	1218 months
Aerosol optical depths (under construction)	14 stations	
Ceilometer data	3 stations	501 months
Radiation measurements from tower	11 stations	1926 months

Services of the WRMC

Since 2008, AWI hosts the WRMC and offers the following services :

1. FTP Server, ftp.bsrn.awi.de for incoming and outgoing BSRN data.
2. Homepage, http://www.bsrn.awi.de for the WRMC-BSRN.
3. Developing a quality management system for the WRMC.
4. Full PANGAEA service for any dataset, which is detailed as follows:
   - Offering a Google-like interface for searching BSRN datasets.
   - Presenting well-defined metadata for any BSRN dataset.
   - Presenting the measurements in different formats.
   - Offering software, e.g. “PanPlot” and “BSRN-Toolbox” (doi:10.1594/PANGAEA.744019) for visualizing and analyzing any PANGAEA derived BSRN dataset.
   - Making any dataset citable by applying digital object identifiers (doi).
   - Guaranteeing long-term availability of all datasets.
   - Following the “Berlin Declaration on Open Data Access”.



Data visualization via the PANGAEA tool PanPlot (doi:10.1594/PANGAEA.330147)