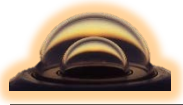


The World Radiation Monitoring Center Update 2020: status, challenges, tasks



Amelie Driemel, Christian Lanconelli



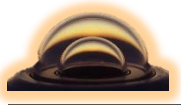
Data overview, status 09-2020



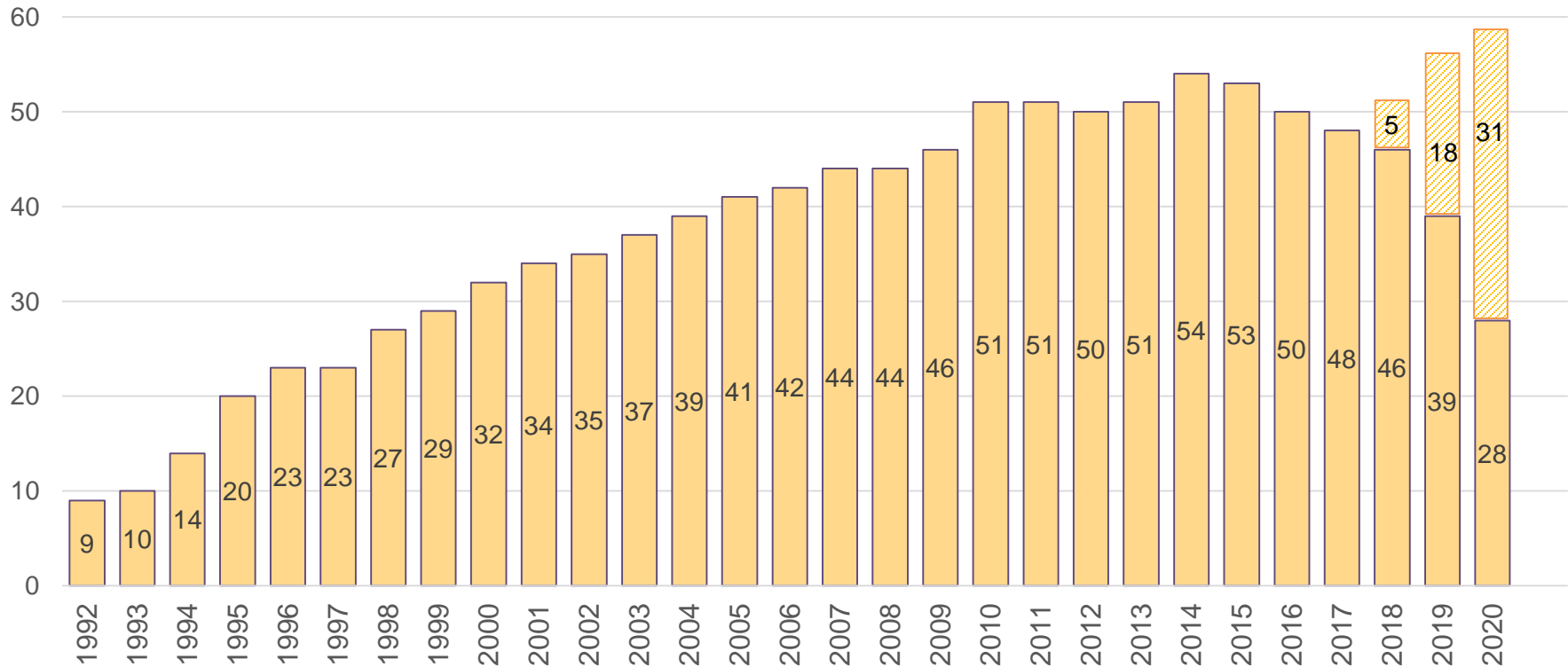
(2018)

1	LR 0100: Global, Diffuse, Direct, Long-wave down	72 (64) stations
2	LR 0300: Reflex, Long-wave up	19 (15) stations
3	LR 0500: UV	13 (12) stations
4	LR 1000: Synops	14 (13) stations
5	LR 1100: Upper air soundings	32 (30) stations
6	LR 1200: Total ozone	9 (9) stations
7	LR 1300: Ceilometer data	3 (3) stations
8	LR 30x0: Radiation measurements from tower	13 (13) stations

Status Sept 2020 **>12,000 (>10800) monthly datasets** ~1,000 years



Stations with data in the WRMC



59 active and 13 ,inactive' or closed stations in 2020

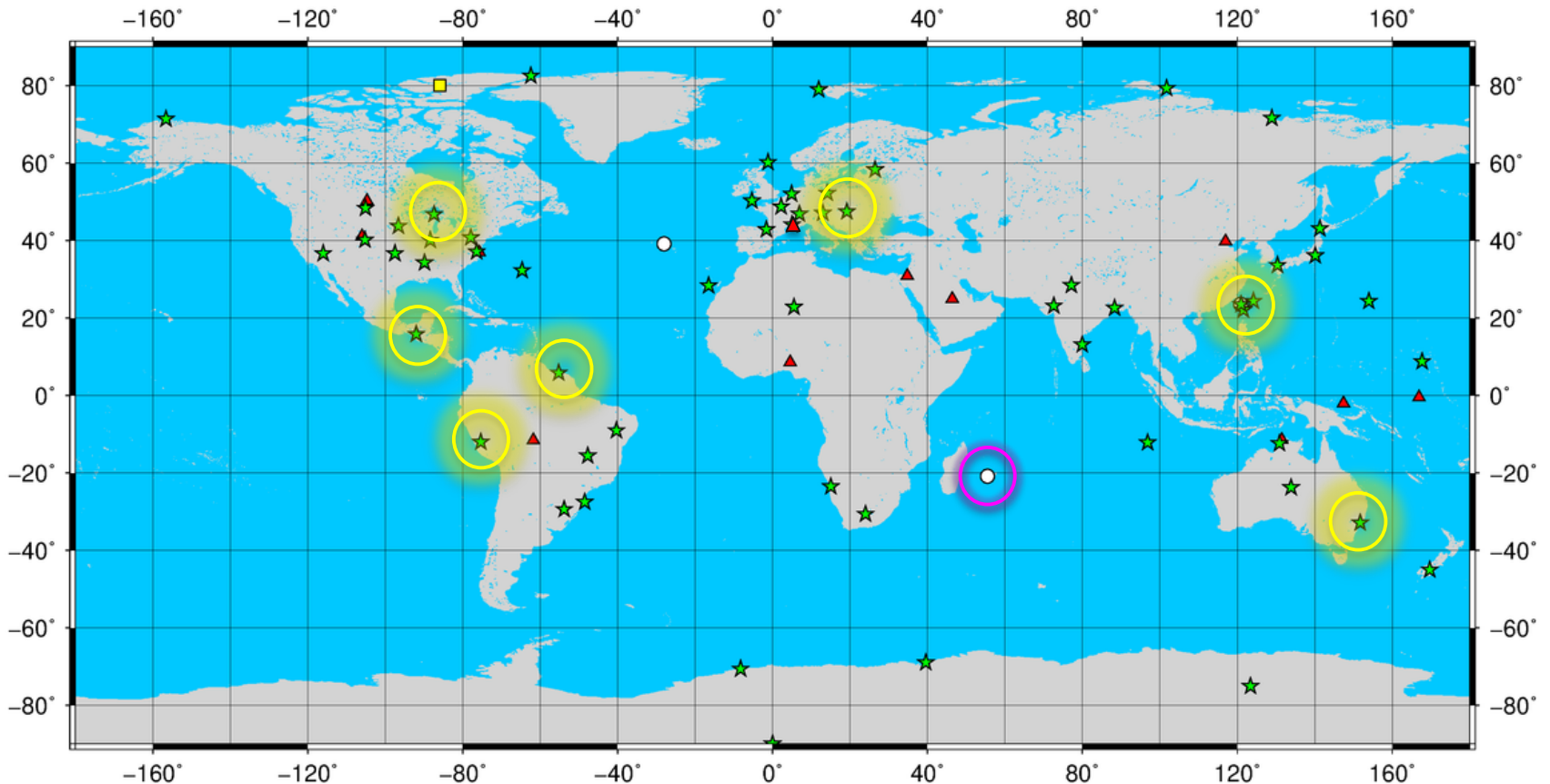
2020: 31 stations are behind schedule!



Changes in stations



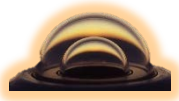
Running, inactive, planned and closed BSRN Stations, August 2020



- Stations**
- ★ Running
 - Inactive
 - ▲ Closed
 - Candidate

8 new additions in the last 2 years

Soon to be added: Reunión



Data extraction



1. ftp server:

<ftp.bsrn.awi.de>

station-to-archive files

Datei...	Zuletzt geändert	Berechtigungen	Besitzer/Gruppe
..			
ale	2015-12-12	drwxr-x---	bsrnadm bsrn
asp	2016-03-30	drwxr-x---	bsrnadm bsrn
bar	2012-10-08	drwxr-x---	bsrnadm bsrn
ber	2015-06-03	drwxr-x---	bsrnadm bsrn
bil	2017-02-01 15:07:00	drwxr-x---	bsrnadm bsrn
bon	2017-01-23 19:45:00	drwxr-x---	bsrnadm bsrn
bos	2017-03-06 09:18:00	drwxr-x---	bsrnadm bsrn
hou	2016-07-21	drwxr-x---	bsrnadm bsrn

2. PANGAEA:

<https://dataportals.pangaea.de/bsrn/>

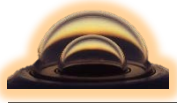


PANGAEA.

Data Publisher for Earth & Environmental Science

Station	Short name	Station scientist currently in charge	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Alert	ALE	Christopher Cox (christopher.j.cox@noaa.gov)													X	X	X	X	X	X	X	X	X	X	X	X	X
Alice Springs	ASP	Matt Tully (m.tully@bom.gov.au)				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Barrow	BAR	Sara Morris (Sara.Morris@noaa.gov)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bermuda	BER	Sara Morris (Sara.Morris@noaa.gov)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Billings	BIL	Charles Long (chuck.long@noaa.gov)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bondville	BON	John Augustine (John.A.Augustine@noaa.gov)				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Boulder, SURFRAD	BOS	John Augustine (John.A.Augustine@noaa.gov)				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Boulder	BOU	** Station closed in July 2016 **	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brasilia	BRB	Enio Bueno Pereira (enio.pereira@inpe.br)															X	X	X	X	X	X	X	X	X	X	X
Cabauw	CAB	Wouter Knap (Knap@knmi.nl)														X	X	X	X	X	X	X	X	X	X	X	X
Camborne	CAM	Jonathan Tamlyn (jonathan.tamlyn@metoffice.gov.uk)										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

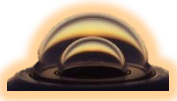
Request from user: give an info.txt when station-to-archive files are exchanged on ftp



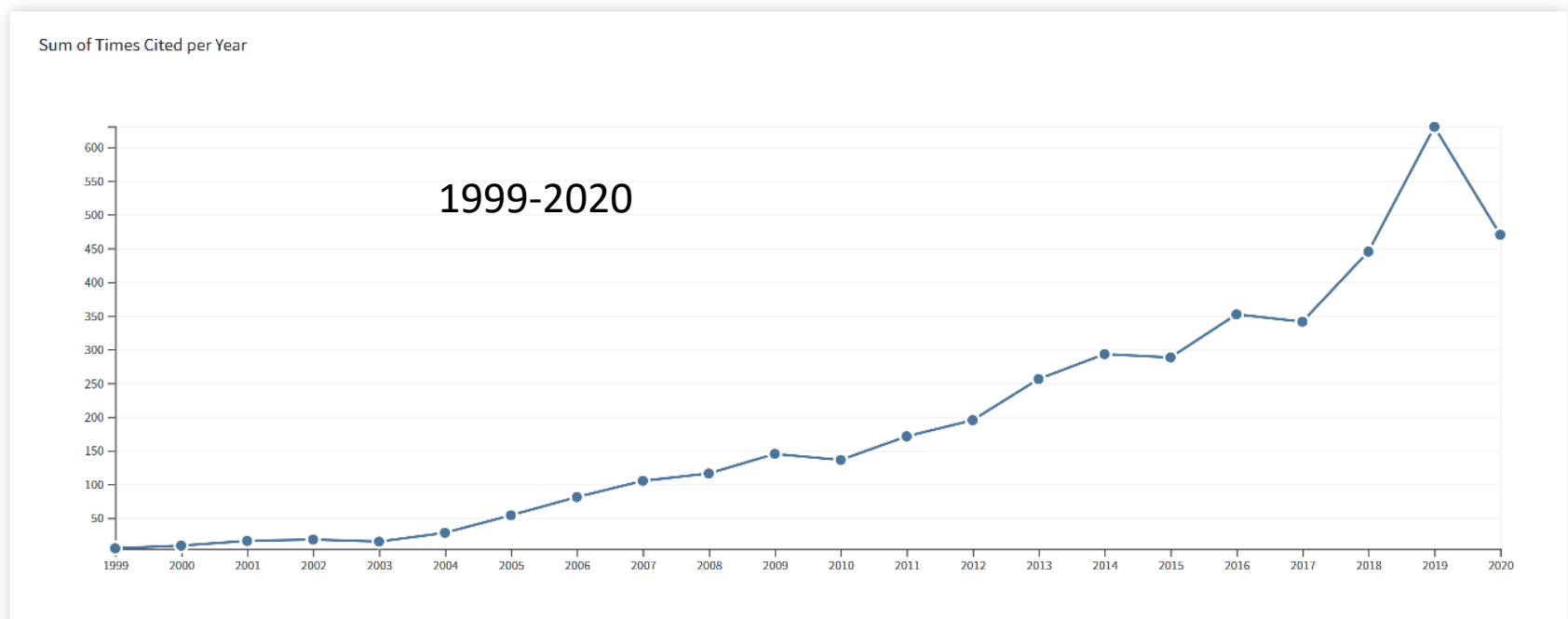
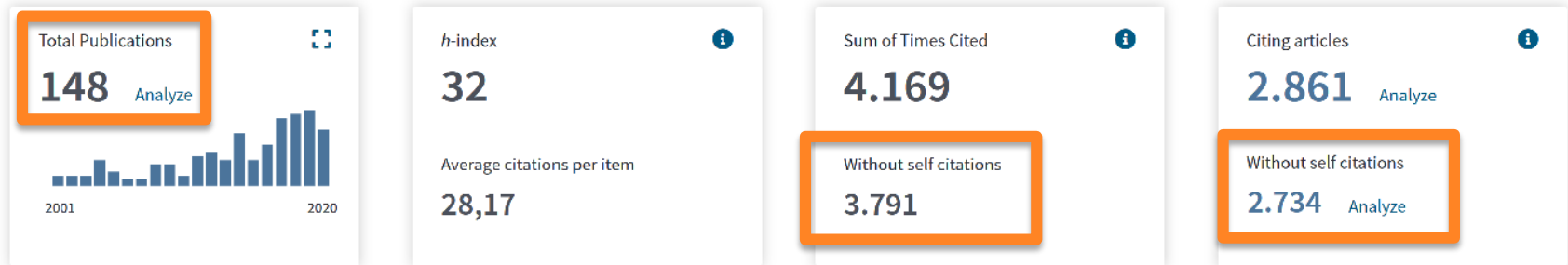
Data users by country



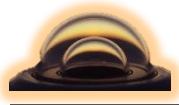
New data requests **140 per year** (statistics since 2016), total 52 countries



BSRN articles in Web of Science



According to [Google scholar](#) our article „Baseline Surface Radiation Network (BSRN): structure and data description (1992-2017)“ has been cited over 70 times



General BSRN publications



https://bsrn.awi.de/other/publications/reviewed-scientific-papers-referring-to-bsrn/

90%

Manuals

Movies

Other radiation data

PangaWiki

Publications

Establishment and development of the BSRN

Reviewed scientific papers referring to BSRN

Other related reports and papers

BSRN in Web of Science

Picture Gallery

Reviewed scientific papers referring to BSRN

This is a compilation of papers related to the BSRN that the WRMC is currently aware of. Since the WRMC is not informed about any submitted paper with BSRN content this list is by far not complete! Please inform us in case you know papers which are missing in this list!

2020

Aebi, C., Gröbner, J., Kazadzis, S., Vuilleumier, L., Gkikas, A., and Kämpfer, N. **2020**
Estimation of cloud optical thickness, single scattering albedo and effective droplet radius using a shortwave radiative closure study in Payerne, Atmos. Meas. Tech., doi:10.5194/amt-13-907-2020

Bright, J.M., Sun, X., Gueymard, C.A., Acord, B., Wang, P., Engerer, N.A. **2020**
Bright-Sun: A globally applicable 1-min irradiance clear-sky detection model, Renew. Sust. Ener. Rev., 121, doi:10.1016/j.rser.2020.109706.

Kato, S., Rutan, D.A., Rose, F.G., Caldwell, T.E., Ham, S.-H., Radkevich, A., Thorsen, T.J., Viudez-Mora, A., Fillmore, D., Huang, X. **2020**
Uncertainty in Satellite-Derived Surface Irradiances and Challenges in Producing Surface Radiation Budget Climate Data Record. *Remote Sens.*, 12, 1950, doi:10.3390/rs12121950.

Laguarda, A., Giacosa, G., Alonso-Suárez, R., Abal, G. **2020**
Performance of the site-adapted CAMS database and locally adjusted cloud index models for estimating global solar horizontal irradiation over the Pampa Húmeda, Solar Energy, 199, 295-307, doi:10.1016/j.solener.2020.02.005. (Data from SMS station)

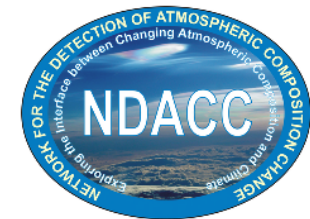
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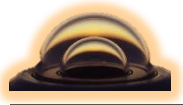
2019

Bright, J.M. **2019**
Solcast: Validation of a satellite-derived solar irradiance dataset. *Solar Energy*, 189, 435-449, doi:10.1016/j.solener.2019.07.086.

García, R.D., Cuevas, E., Ramos, R., Cachorro, V.E., Redondas, A., and Moreno-Ruiz, J.A. **2019**
Description of the Baseline Surface Radiation Network (BSRN) station at the Izaña Observatory (2009-2017): measurements and quality control/assurance procedures, Geosci. Instrum. Method. Data Syst., 8, 77-96, doi:10.5194/gi-8-77-2019.

Song, R., Muller, J.-P., Kharbouche, S. and Woodgate, W. **2019**
Intercomparison of Surface Albedo Retrievals from MISR, MODIS, CGLS Using Tower and





Current staff of the WRMC



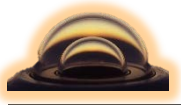
Wolfgang Cohrs (Technical coordinator)

Amelie Driemel



Barbara Wagner
(BSRN Toolbox)

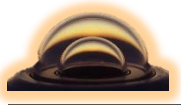




Current issues



- Data quality of submitted files could often be better, many things undetected => **Central quality check**? => presentation Wouter Knap
- Some **stations closed/no longer maintained/financial problems**;
Some stations have urgent **sensor/tracker problems** but no spare (e.g. TAM) => have a central pool of spares? Bulletin-board?
- Data submission in arrears or with quality issues => I am lacking the time to write several **reminder-Mails**, please: answer the first time and re-submit / submit data within a reasonable time-frame!
- Lots of **new station scientists** with problems starting into new submissions (CAM/LER, ASP/COC/DWN/LAU, GAN/GUR/HOW/TIR, US stations taken over from Chuck, etc)
=> we need to support those „new“ station scientists better, e.g. provide codes for creating station-to-archive files etc.



Dealing with retirements/etc..



- Inform Project Manager and WRMC staff in advance
- Assign interim if no direct succession is yet in place
- Document details in LR0003 (comment) of station-to-archive file
- Authorship of datasets in interim period? (See: Australian stations)
- Change E-Mail of retired station scientist to Institute E-Mail?



PANGAEA.

Data Publisher for Earth & Environmental Science

SEARCH SUBMIT ABOUT CONTACT

Citation:

Australian Bureau of Meteorology (2018): Basic measurements of radiation at station Darwin Met Office (2018-03). *Bureau of Meteorology Research Centre, Melbourne, PANGAEA*, <https://doi.pangaea.de/10.1594/PANGAEA.891631> (DOI registration in progress)

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Thanks to all of you out there working for BSRN even during this difficult year!

