

Figure 1.- (a) Location of the Izaña station (IZA BSRN #61) on a global map of all BSRN stations (<http://bsrn.awi.de>) and (b) Image of Izaña Observatory.

The Izaña Observatory (IZA BSRN #61) is part of the Global Atmospheric Watch (GAW) programme and is managed by the Izaña Atmospheric Research Center (IARC) from the State Meteorological Agency (AEMET, Spain) (more information: <https://aemet.izana.es>). It is located in Tenerife Island (Canary Islands; 28°18' N, 16°29' W, 2.367 m a.s.l.) above a quasi-permanent inversion layer with excellent conditions for *in situ* and column measurements of trace gases and aerosols under “free troposphere” conditions. The environmental conditions (stable total column ozone, very low precipitable water vapour and low aerosols content) and the high frequency of clean and pristine skies make IZA an optimal site for calibration and validation activities. In fact, IZA is a WMO-CIMO Testbed for Aerosols and Water Vapor Remote Sensing Instruments and hosts the WMO Regional Brewer Calibration Center for Europe (RBCC-E; <http://rbcce.aemet.es>). The radiation site at Izaña is part of BSRN since March 2009. (<http://www.bsrn.aemet.es/>)

INSTRUMENTS

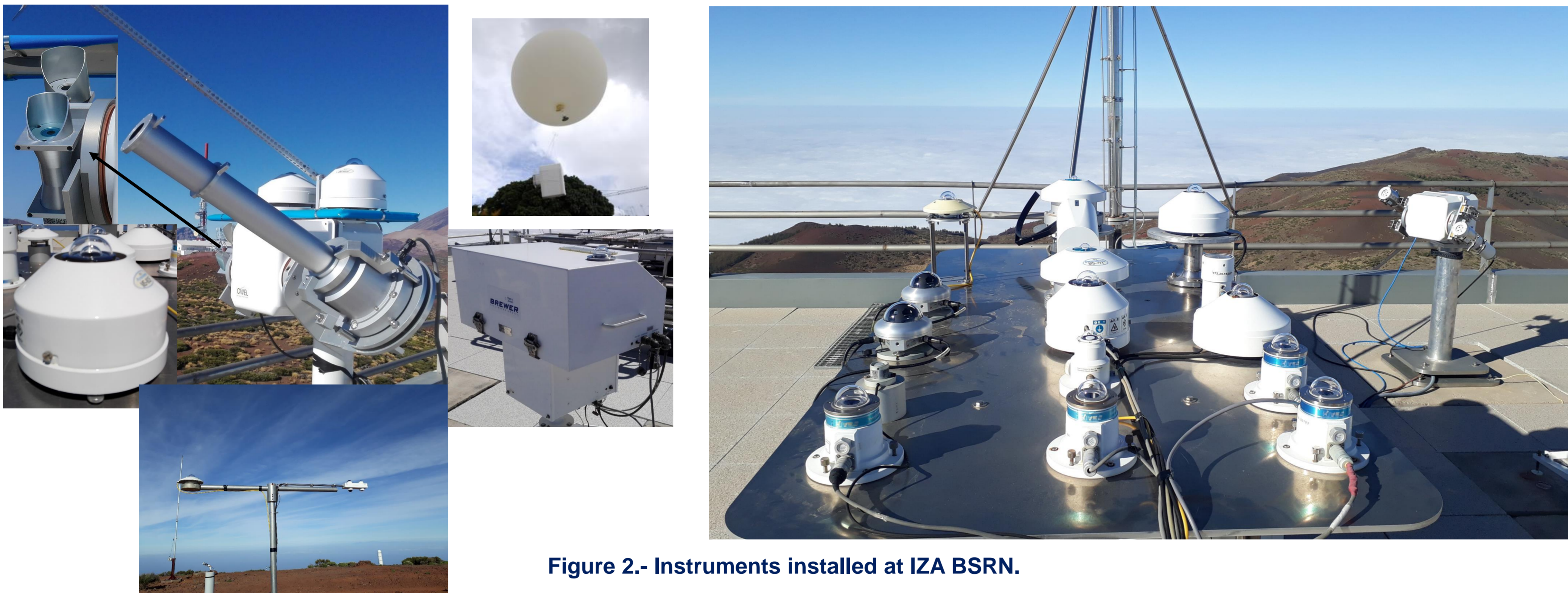


Figure 2.- Instruments installed at IZA BSRN.

Basic measurements

- Global shortwave radiation (SWD)
- Direct Radiation (DIR)
- Diffuse Radiation (DIF)
- Longwave downward radiation (LWD)

Extended measurements:

- Ultraviolet measurements (UV-A and UV-B)
- Shortwave upward radiation (SWU)
- Shortwave upward radiation (SWU)

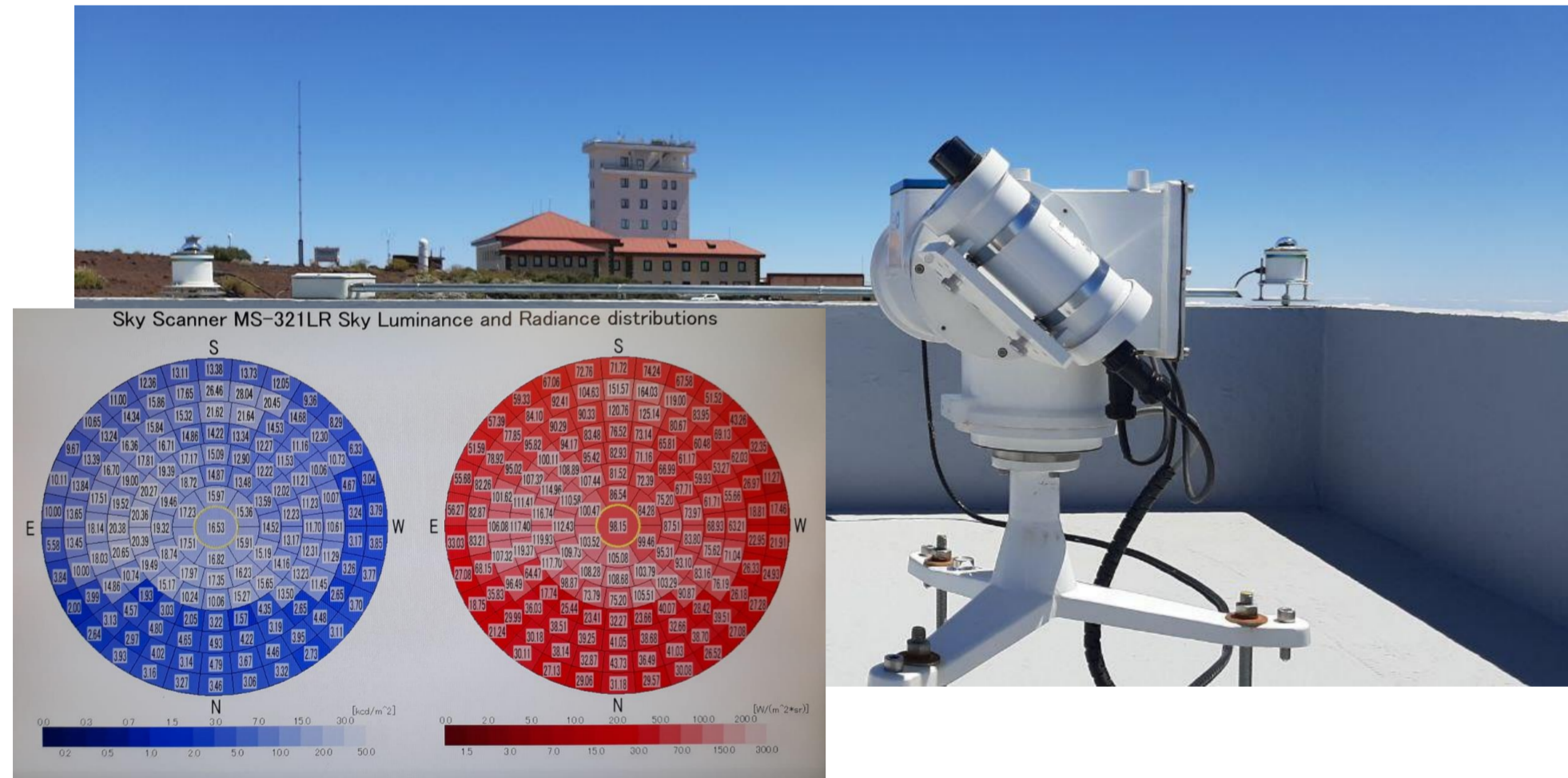
Additional measurements

- Radiosonde data
- Total column ozone

More information: Driemel et al., 2018 and García et al. 2019

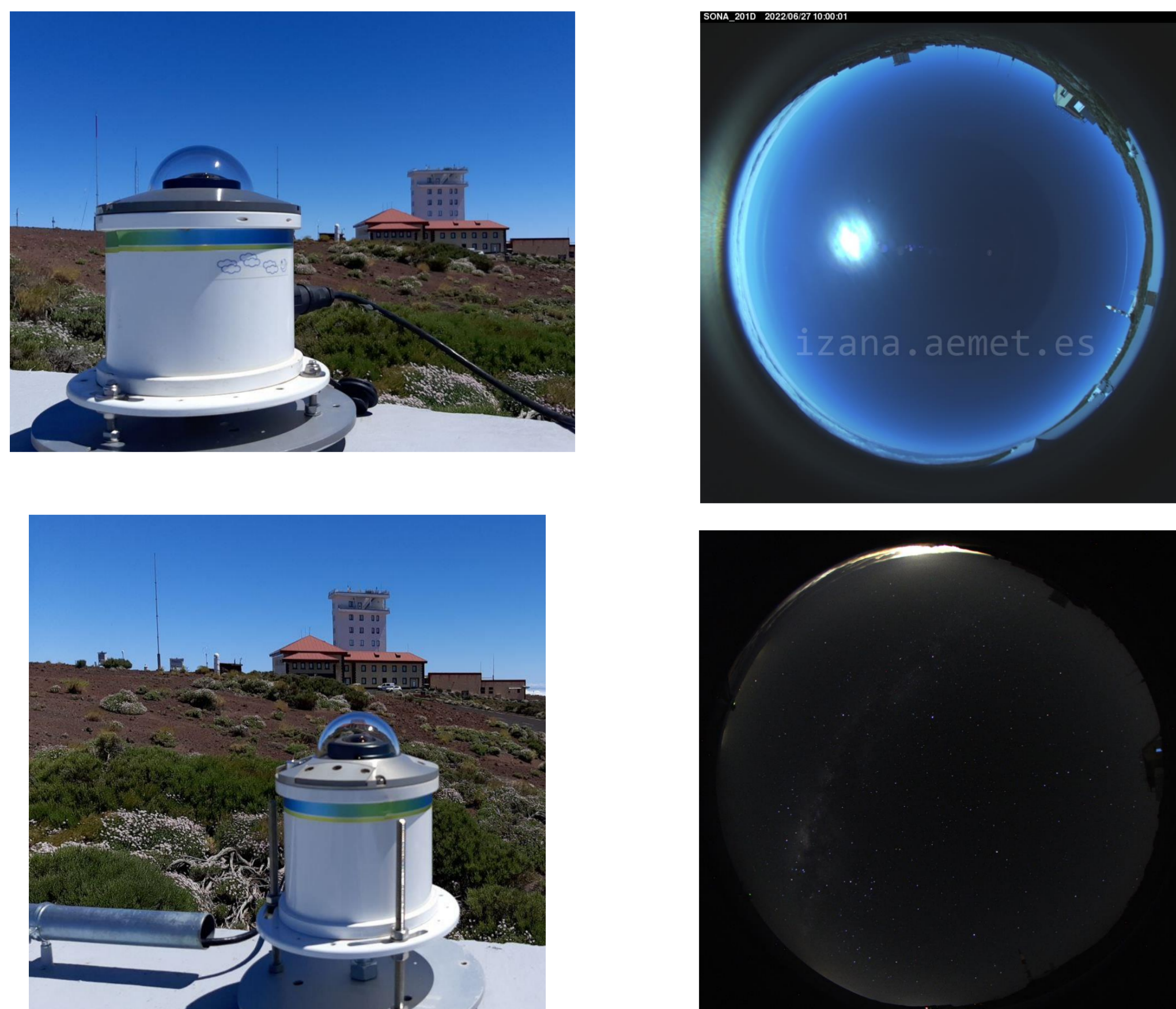
NEW INSTRUMENTATION

Sky Scanner MS-321 LR : Sky Luminance and Radiance distribution



Total-sky SONA CAMERA

Diurnal and nocturnal images



EKO RSB Spectroradiometer: Global and diffuse spectral irradiance between 300 and 1100 nm



EKO MS-711 Spectroradiometer Direct spectral irradiance between 300 and 1100 nm



TIME SERIES

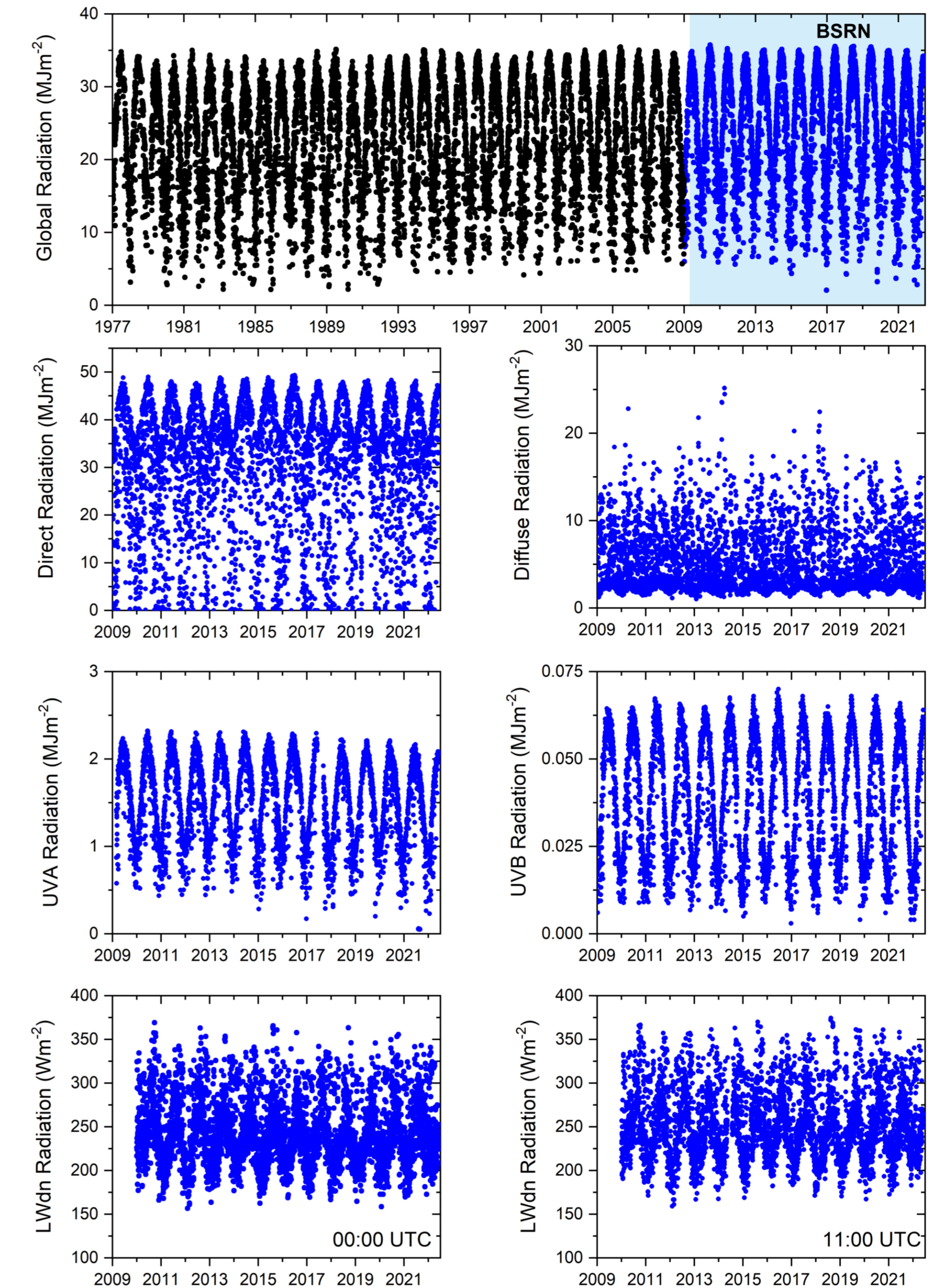


Figure 3.- Time series of global, direct, diffuse, UVA, UVB and LWdn radiation at 00:00 and 11:00 UTC at IZA BSRN.

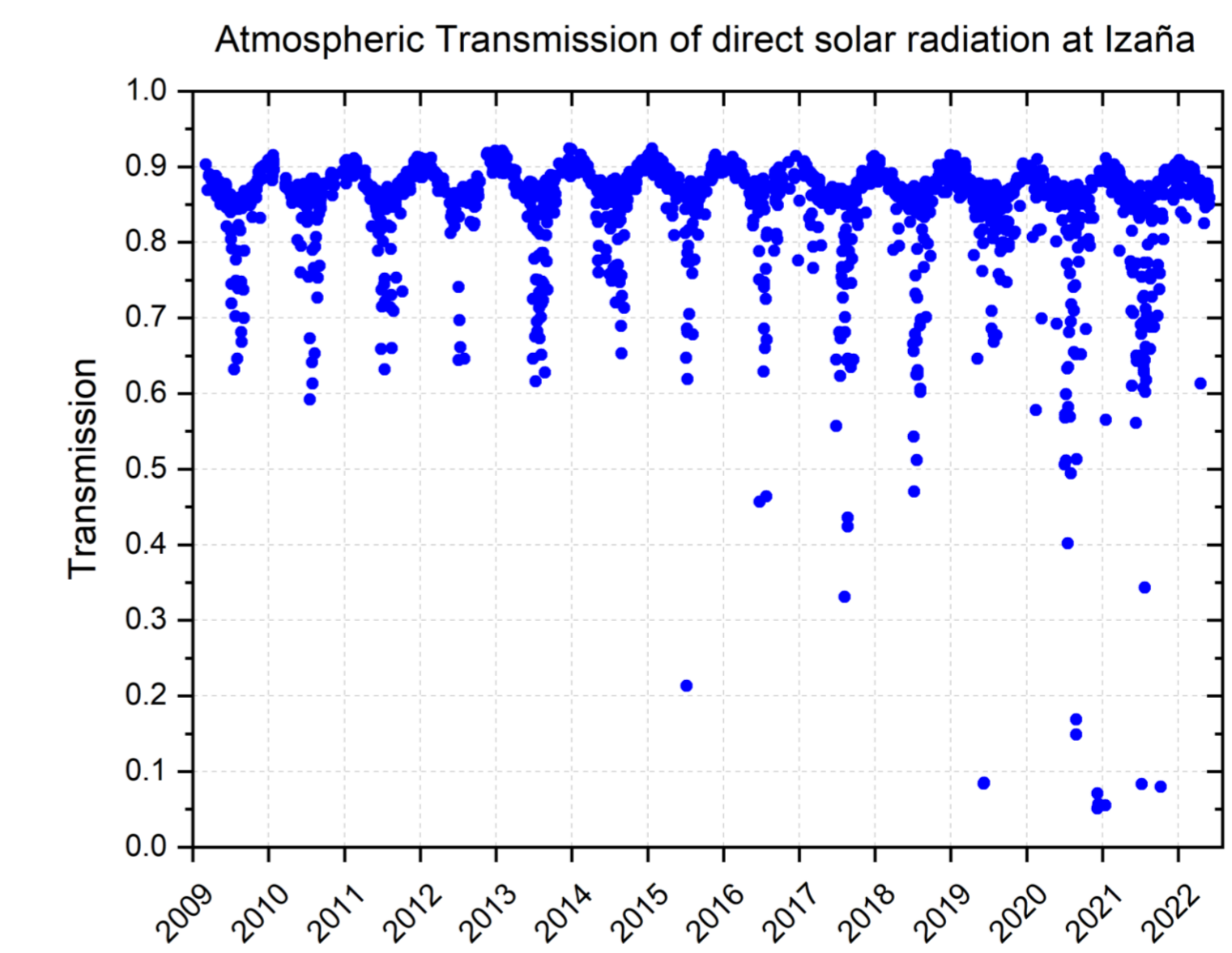


Figure 4.- Daily apparent solar transmittance at IZA station BSRN determined from solar broadband direct measurements (Ellis and Pueschel, 1971)

References
Ellis, H. T., R.F. Pueschel (1971). Solar Radiation: Absence of air pollution trends at Mauna Loa. American Association for the Advancement of Science, 172, 845-846. <https://doi.org/10.1126/science.172.3985.845>.
Driemel, A., Augustine, J., Behrens, K., Colle, S., Cox, C., Cuevas-Agulló, E., Denn, F. M., Duprat, T., Fukuda, M., Grobe, H., Haeffelin, M., Hodges, G., Hyett, N., Ijima, O., Kallias, A., Knap, W., Kustov, V., Long, C. N., Longenecker, D., Lupi, A., Maturilli, M., Mimouni, M., Nisangwane, L., Ogihara, H., Olano, X., Olfes, M., Omori, M., Passamani, L., Pereira, E. B., Schmühsen, H., Schumacher, S., Sieger, R., Tamlyn, J., Vogt, R., Vuilleumier, L., Xia, X., Ohmura, A., and König-Langlo, G.: Baseline Surface Radiation Network (BSRN): structure and data description (1992-2017), Earth Syst. Sci. Data, 10, 1491-1501, <https://doi.org/10.5194/essd-10-1491-2018>, 2018.
García, R. D., E. Cuevas, R. Ramos, V.E. Cachorro, A. Redondas, J.A. Moreno-Ruiz (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, <https://doi.org/10.5194/gi-8-77-2019>.

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Next deployments

EKO MS-713 Spectroradiometer:

MS-713 Spectroradiometer provides solar spectral data covering the near-infrared (NIR) range between 900 and 2500nm.

EKO ML-020P PAR Sensor

PAR sensor provides Photosynthetically Active Radiation (PAR) (400 to 700 nm).