



SLSTR Composite Land Surface Temperature (LST)

Time and Space composite products of the SLSTR Land Surface Temperature (LST) are now routinely generated by the S3MPC (by University of Leicester) and are available from the FTP S3 MPC public website hosted by ACRI-ST:

- <ftp://ftp.adwaiseo-services.com/>
- login: ftp_ompc_public
- password: ee3ook2F
- folder : /SL_LST_composite

The SLSTR composite LST products are separated into different directories, depending on the length of time period used to produce the products (daily / monthly). Inside these directories the products are split accordingly to the year and month of the observation data used to produce the product and the platform (S3A / S3B). The directory structure can be summarised as such:

/SL_LST_composite/<daily / monthly>/yyyy/mm/<platform>

where :

- <platform> is 'S3A_LST_c' or 'S3B_LST_c'

The data are stored in an equal-angle longitude-latitude global grid. Each global mosaic is a single datafile with a pixel ground resolution of 0.05°. The data format is a NetCDF-CF conforming NetCDF4 file.

the file naming convention is:

SSD-L3-S3<A or B>_LST_3C<yyyy><mm><dd>_<DAILYX or MNTHLY>-NUOL-0.05X0.05-V<version>.nc

where:

- <dd> is either the 2-digit day of the month for "DAILYX" datafiles or "XX" for "MNTHLY" datafiles.
- <version> is the product version number, which relates to this specific processing and not the underlying SLSTR Collection Number or Processing Baseline.

Each datafile covers the entire globe at 0.05° with grid cells filled with a Fill Value where no LST value is determined. Each file is also split between Daytime composites and Night-time composites by way of a "time" dimension. The table below details the dimensions and variables in each datafile.

Dimensions	Name
	time
	lat
	lon

Variables	Name	Type	Dimensions	Units	Comment
	time	short	time	unitless / hours	Diurnal index (day should have the value 0, night should have the value 1)
	lat	float	lat	degrees_north	Grid cell centre latitude in decimal degrees north
	lon	float	lon	degrees_east	Grid cell centre longitude in decimal degrees east
	LST	short	time, lat, lon	K	Mean LST of the grid cell from cloud cleared input pixels
	LST_uncertainty	short	time, lat, lon	K	Grid cell LST uncertainty
	n	int	time, lat, lon	unitless	the total number of equivalent whole pixels assigned to the grid cell in the production of the averaged data (not including cloud contaminated, or non-valid pixels)
	nclد	int	time, lat, lon	unitless	the total number of equivalent whole pixels assigned to the grid cell in the production of the averaged data that are identified as cloud contaminated by the product's cloud clearing algorithm
	satze	short	time, lat, lon	degree	Mean satellite zenith viewing angle for the grid cell
	sataz	short	time, lat, lon	degree	Mean satellite azimuth angle for the grid cell



LST data in these composite datafiles have been quality checked with regards to input Level-2 data, with only valid data stored - all invalid data is assigned with the _FillValue. No LST data is available over open ocean pixels; LST is derived instead over all land, lakes, and land-ice pixels. The LST has been cloud cleared in the processing so the output datafiles contain only clear-sky LST.

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