

## Data Profile – Nightlight Data

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### Introduction

High resolution night light remotely sensed imagery (JL1-3) from Chang Guang Satellite Technology Co., Ltd. (CGSTL) in Glasgow and Edinburgh areas. CGSTL is the first commercial remote sensing satellite company in China. Jilin-1 constellation can visit any place in the world five to seven times a day, with the ability to update a global map once a year and a national map four times a year. Jilin-1 satellite constellation can provide high-quality remote sensing information and product services for agricultural and forestry production, environmental monitoring, smart city, geographical mapping, land planning and other fields.

### Scale and Extent

Field	Value
Data Owner	Chang Guang Satellite Technology Co., Ltd
Analytical Units	Night time images
Data Format	Image
Temporal Extent	Glasgow image was obtained on Dec 2021 and the Edinburgh data was obtained on Jan 2022
Geographical Extent	Glasgow, Edinburgh

### Citation Information

The following statement should be included when citing the use of this dataset:

Chang Guang Satellite Technology Co., Ltd, Economic and Social Research Council, Nightlight data, 2022 [data collection] University of Glasgow - Urban Big Data Centre.

### Audience

Data of interest to researchers who are interested in various night time activities for example analysis of walking, cycling, transport at night-time. It could be useful in research related to crime occurring during the night-time.

### Data Access

The is classified as Safeguarded Data. To apply to access the data fill in the [UBDC Application Form](#)

### Content

The dataset consists of satellite image dataset descriptions.

The satellite image dataset descriptions are as follows:

GSD (ground sample distance, or spatial resolution):  $\leq 1\text{m}$

ONA:  $\leq 19$  degrees

Bands: R, G, B

ortho-images with WGS84 projection

These are satellite images. The pixel value represents light intensity.

There are two folders containing two kinds of product : Enhanced mosaic products and ordinary mosaic products.

Enhanced night image is a visual 8 bits image product produced by further denoising and target contrast processing for the original night image.

Glasgow image was obtained on Dec 2021 and the Edinburgh data was obtained on Jan 2022.

Original image is a 12 bits image.

The products include meta files, which are in XML format.