
GEE Time Series Explorer

Release 2.0

Andreas Rabe, Philippe Rufin

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This documentation is structured as follows:

GEE TIMESERIES EXPLORER

Disclaimer: this website was tested with the Google Chrome webbrowser. If your webbrowser has problems, e.g. running videos, you may switch.

1.1 Overview

GEE Time Series Explorer is a QGIS plugin for interactive exploration of temporal raster data available via the Google Earth Engine (GEE) Data Catalog.

The **GEE Time Series Explorer** plugin adds a panel for selecting a GEE image collection and a plot widget for visualizing temporal profiles.

Version 2.0 with complete GUI overhaul

Slides from the Living Planet Symposium 2022 talk in Bonn, Germany

Janz, A. et al. (2022, May 26). [GEE Time Series Explorer: Planetary-scale visualization and temporal profile sampling of EO imagery from the Earth Engine Data Catalog in QGIS and the EnMAP-Box](#) [oral presentation]. Living Planet Symposium, Bonn, Germany

How to cite

Rufin, P., Rabe, A., Nill, L., and Hostert, P. (2021) [GEE TIMESERIES EXPLORER FOR QGIS - INSTANT ACCESS TO PETABYTES OF EARTH OBSERVATION DATA](#), Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLVI-4/W2-2021, 155-158, <https://doi.org/10.5194/isprs-archives-XLVI-4-W2-2021-155-2021>, 2021.

Important: Version 2.0 is a complete overhaul and reimplementaion of the plugin. **The code base moved into the EnMAP-Box 3 plugin.**

The GEE Time Series Explorer can still be used from within the QGIS main window, and additionally, from the EnMAP-Box 3 main window.

1.2 Installation

In QGIS select **QGIS > Plugins > Manage and Install Plugins...**, search for *GEE Timeseries Explorer* and install the plugin.


Note: this plugin relies on the *Earth Engine API*. In order to access Earth Engine, you must have an Google account that is authorized for Earth Engine. If you haven't used Earth Engine so far, the easiest way to make sure that it is working on your system, is to use the web-based Code Editor: <https://code.earthengine.google.com/>

Important: As mentioned above, with Version 2.0, the code base moved into EnMAP-Box 3 plugin, which is now a dependency for the GEE Time Series Explorer. **After installation, you may check, if the EnMAP-Box 3 plugin version 3.10.0.20220524T082114 is correctly installed.** If not, you can also install it manually. Be sure to allow experimental plugins! Note that EnMAP-Box v3.9 won't work.

1.3 Getting started

Show the GUI




In the QGIS toolbar click  to show the **GEE Time Series Explorer** panels.

Load a collection, plot a temporal profile and visualize an image

1. Select the **Landsat 8 Surface Reflectance** collection in the **Data Catalog** tab of the main panel.
2. Select the **NDVI** band in the **Profile Viewer** panel.



3. Activate the **Current Location** map tool  and select a location on the map. This will plot the temporal profile for that location in the **Profile Viewer** panel.
4. Select a data point in the plot to visualize the associated image. The image is displayed in it's default visualization.

Improve image contrast stretch

The default visualization may give a poor image contrast, which you may want to improve. In the **Band Rendering** tab of the main panel, you may set suitable min/max values manually, or specify lower/upper percentile cut off values, e.g. 2% to 98%. Note that the statistics are calculated for the current map extent.

Visualize derived vegetation indices

Beside visualizing original image bands in Multiband color RGB, it is possible to visualize derived vegetation indices.

Prepare a cloud-free composite

To create a composite that aggregates all images in a given date range, we just switch from **Image Selection** mode to **Composite Selection** mode in the **Profile Viewer** panel. In the plot we can now select a date range and create our first, very cloudy, composite. By applying a **Pixel Quality Filter** we can easily exclude all pixel affected by cloud and cloud shadow. And finally, we can improve the contrast stretch of the visualization.

Warning: The rest of the documentation is currently under construction and will be available soon.

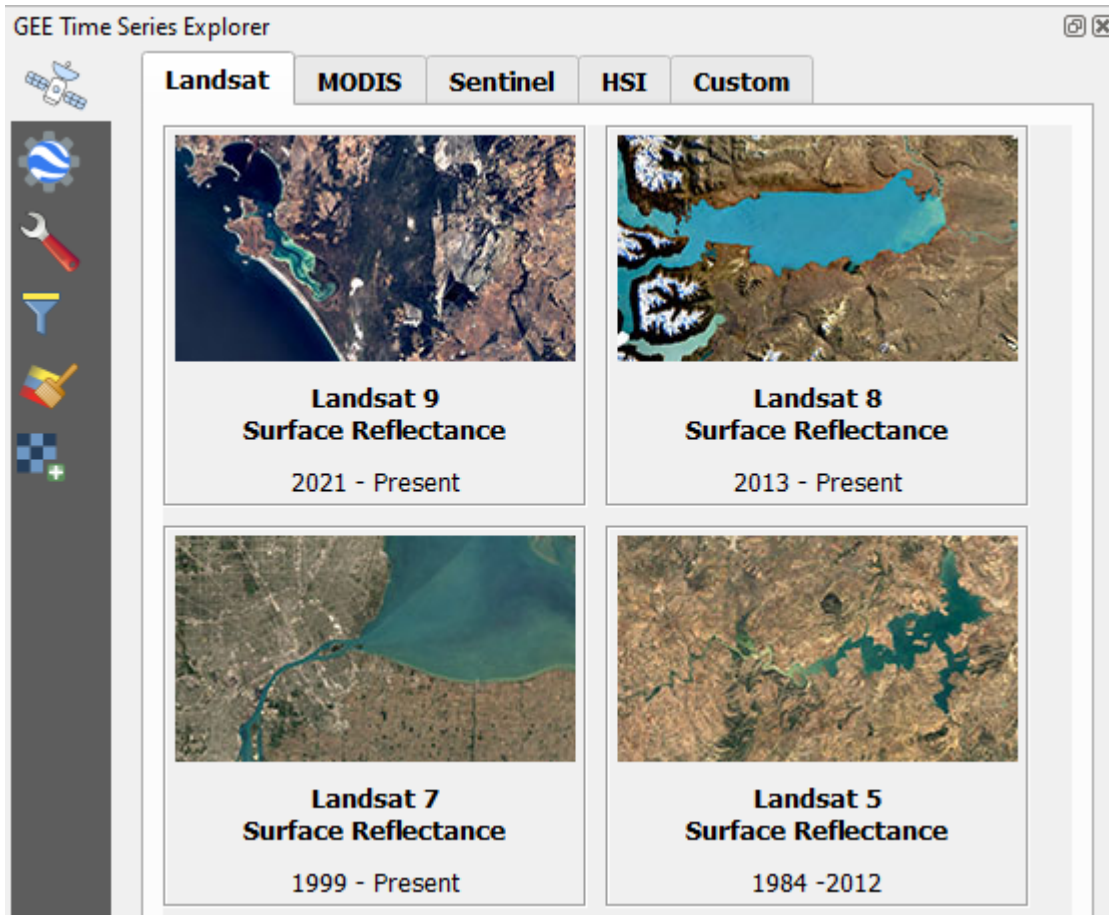


Fig. 1: GEE Time Series Explorer main panel, showing the Data Catalog tab with Landsat collections.

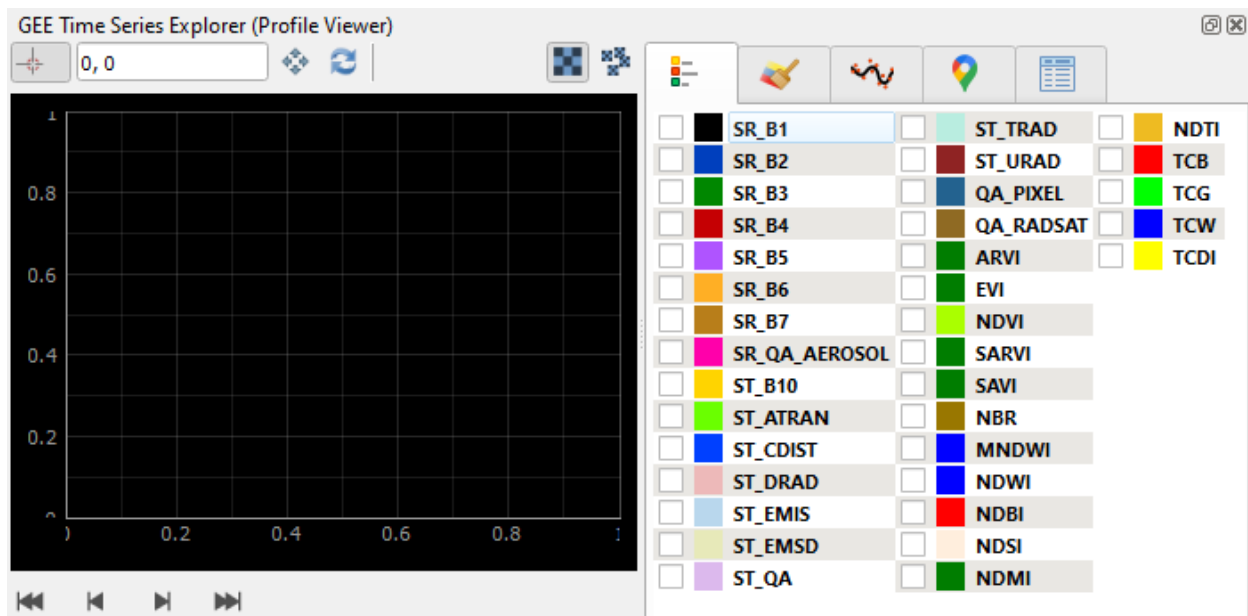


Fig. 2: GEE Time Series Explorer (Profile Viewer) panel.

1.4 Contact

Please provide feedback to [Andreas Rabe](mailto:andreas.rabe@geo.hu-berlin.de) (andreas.rabe@geo.hu-berlin.de) or [create an issue](#).