



JAXA Earth API

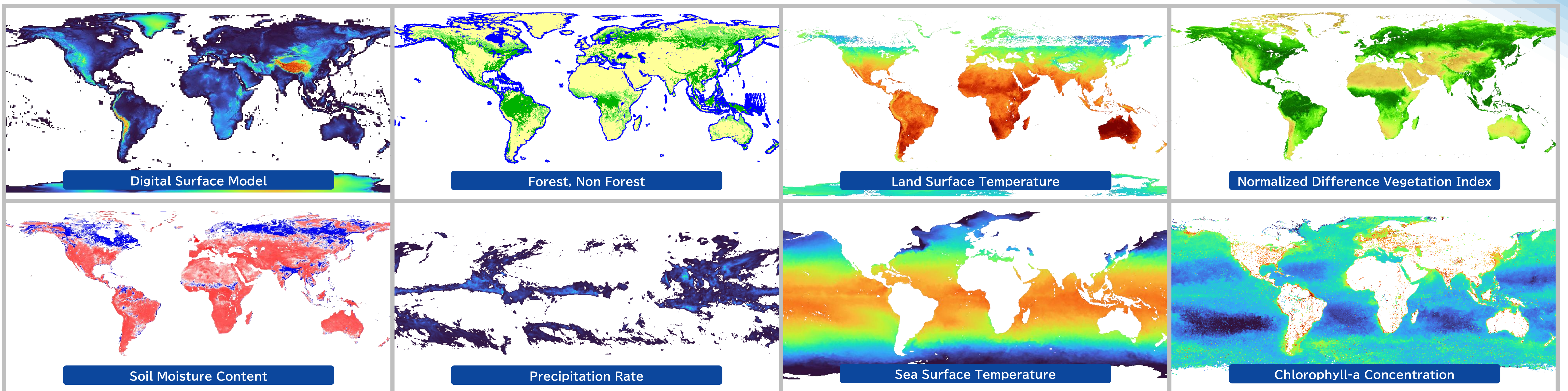
Overview of JAXA Earth API

- Retrieve satellite data directly within your applications using API modules for Python and JavaScript. With just a few lines of code, you can access numerical data and perform statistical analysis and image generation.
- The API automatically handles key remote sensing processes, including map projection and conversion to physical and engineering values, allowing users to focus on analysis rather than data preprocessing.
- By using the API, advanced applications can be developed quickly and cost-effectively, lowering the barrier to sophisticated Earth observation analysis.
- Build low-cost, cloud-based databases compatible with Cloud Optimized GeoTIFF (COG) and SpatioTemporal Asset Catalog (STAC) standards.
- Approximately 90 types of satellite datasets, observed by JAXA's Earth observation satellites - including global-scale land surface and environmental data - are now available through the API.

```
import * as je from './jaxa.earth.esm.js';

const data = await je.getData({
  collection: "https://***** AW3D30.v3.2_global/collection.json",
  catalog: "2021-02/catalog.json",
  band: "DSM",
  width: 1000,
  height: 500,
  bbox: [-180, -90, 180, 90],
});
const cmap = new je.image.ColorMap(0,6000, "jet");
document.body.appendChild(je.image.createImage(data, cmap).getCanvas());
```

Example of API (JavaScript ver.) to display global topographic data in a browser

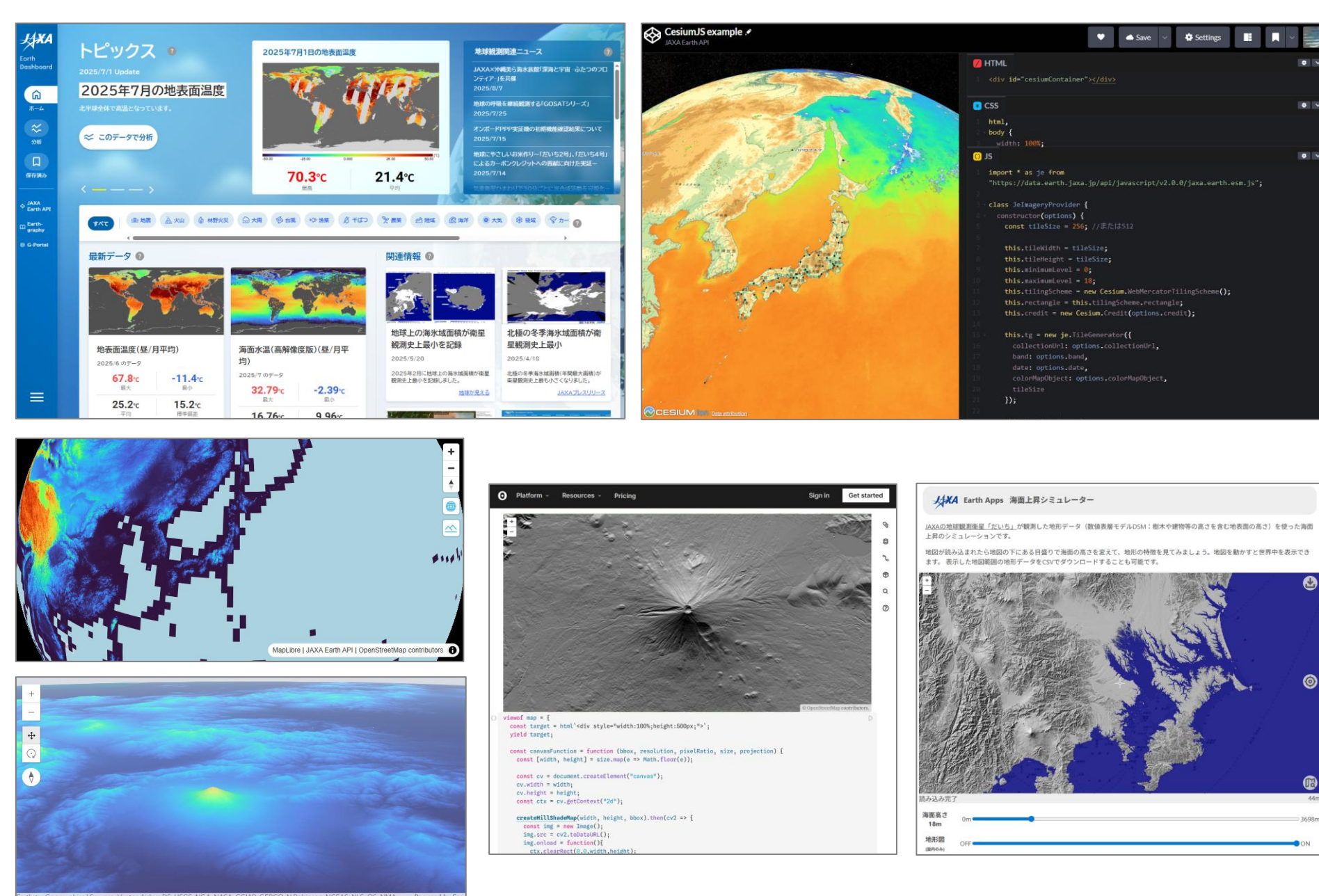


Main datasets available through API. More datasets are available, see the website.

Usage Examples of JAXA Earth API

Web App Development

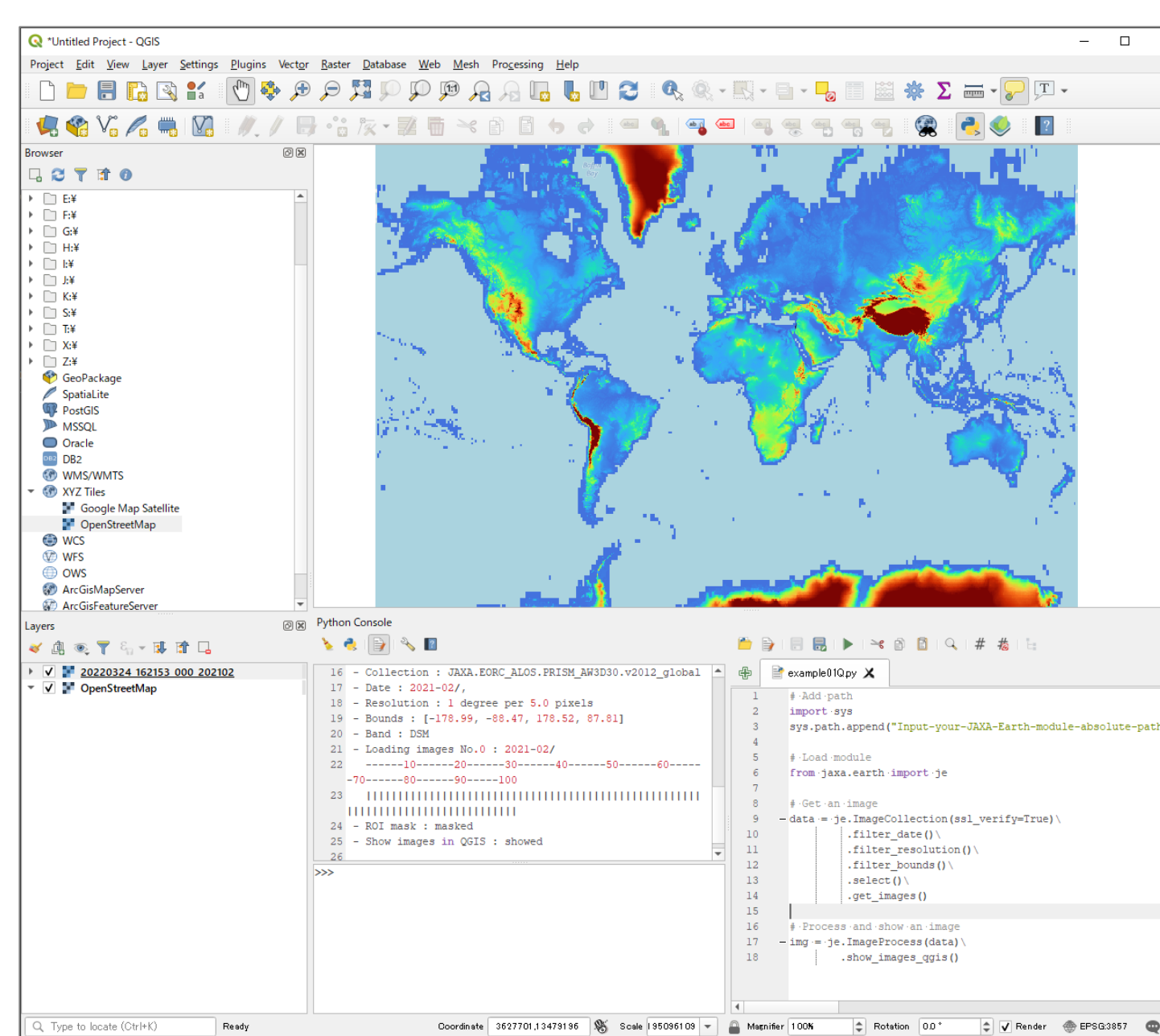
The JavaScript API enables seamless integration with 2D and 3D mapping APIs and allows basic statistical processing to be performed directly in the browser, making it easy to develop advanced web applications.



Examples of Browser Execution and Map APIs Integration (e.g., OpenLayers, MapLibre, Cesium, Leaflet, ArcGIS)

GIS Integration

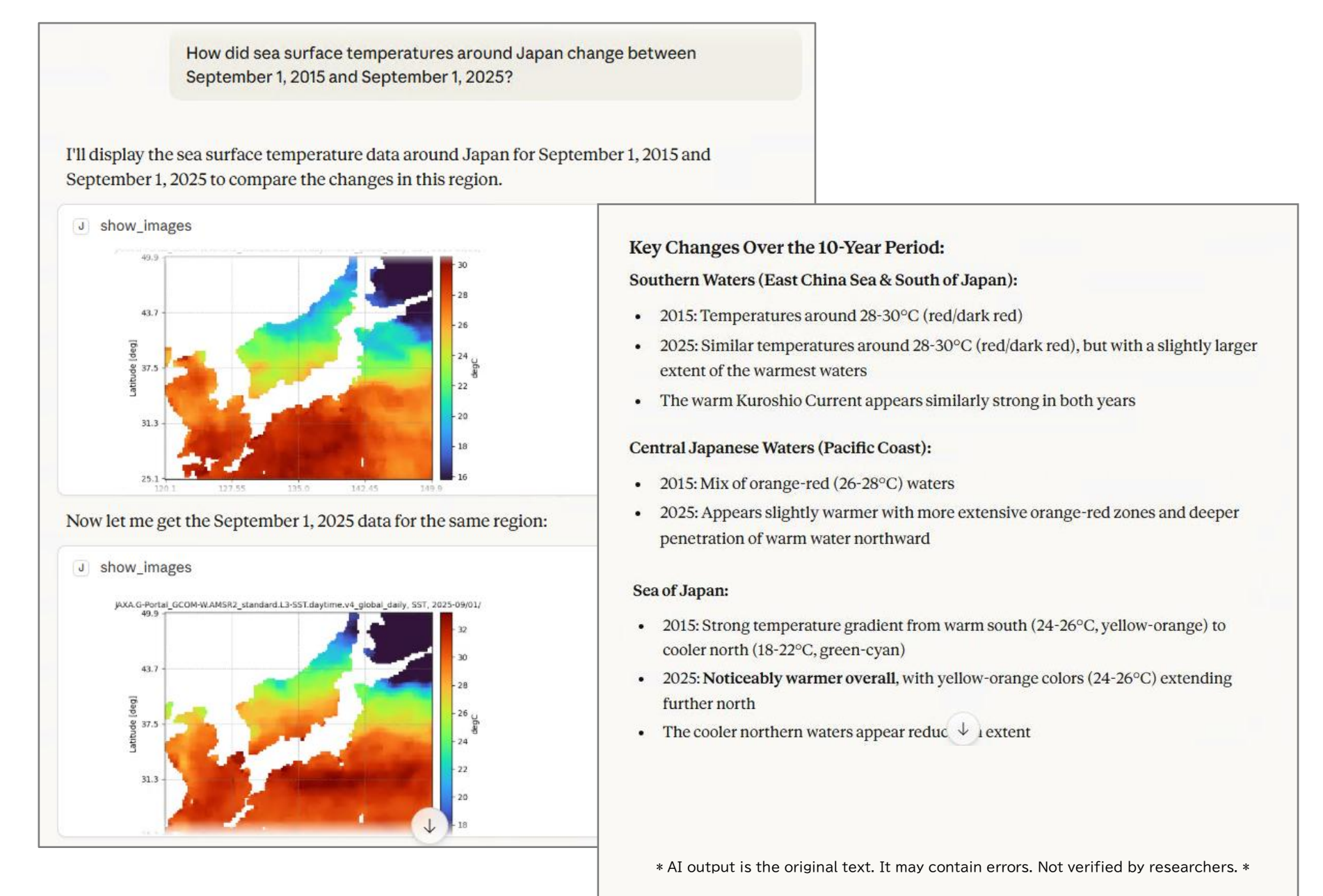
By using the Python API, data can be imported directly into QGIS. No need to download and manually load huge satellite data files one by one. JAXA Earth API QGIS Plugin is also available!



Example of displaying global topographic data on QGIS

Generative AI Integration

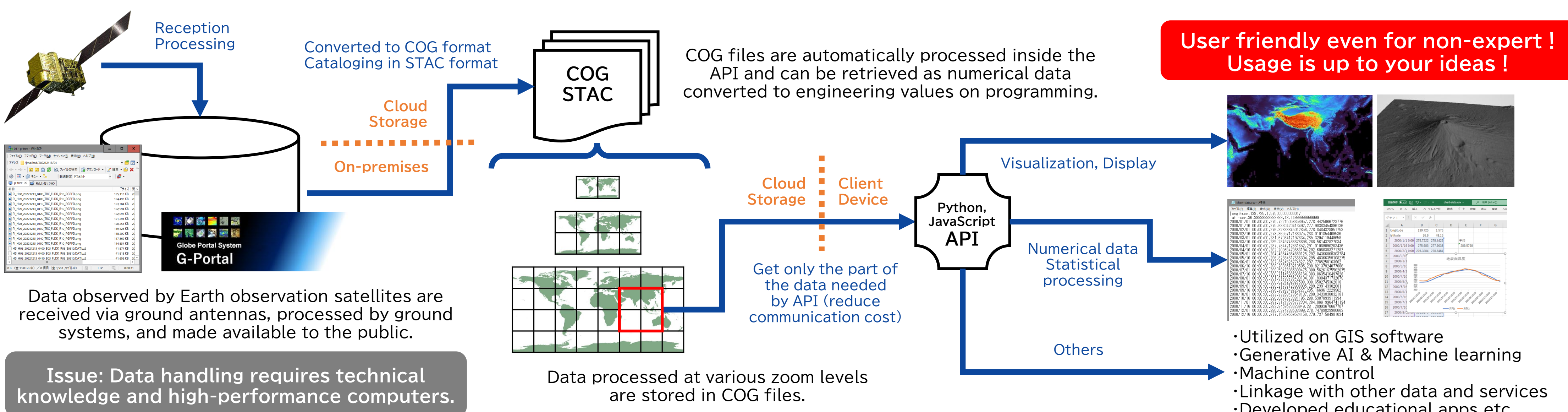
Generative AI can automatically retrieve satellite data through MCP and Agent Skills. It generates and executes the necessary code to access the data, then provides user-friendly explanations based on the retrieved results.



Example execution using MCP (Built with APIs) and Generative AI (e.g., Claude Desktop)

Structure of JAXA Earth API

- JAXA's data available via the G-Portal are converted into Cloud Optimized GeoTIFF (COG) and SpatioTemporal Asset Catalog (STAC) format.
- COG/STAC files are stored on simple cloud storage for public access.
- API module (Python or JavaScript) in user's code executes the data retrieval method and data are loaded as an array of numerical values.
- Users can freely process these numerical values - such as generating images or performing statistical analysis - using general purpose programming.



More Details

JAXA Earth API Website



data.earth.jaxa.jp

Available to anyone. Free & no registration required!