



How to find JAXA's satellite data

～ How to download JAXA's satellite data by G-Portal～

JAXAの衛星データの探し方

～G-Portal等の紹介～

May 27th, 2020

Space Technology Directorate I
Satellite Application Operation center
第一宇宙技術部門
衛星利用運用センター

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JAXA Satellite Earth Observation Web Sites (JAXA地球観測衛星のWebサイト)



「JAXA for Earth」

<http://earth.jaxa.jp/>

- 50 JAXA Sites related to satellite Earth observations (EOs)
- 16 Partner's Sites related to JAXA satellite EO products
- Data acquisition source
- Related information of the data

(As of May 15th, 2020)

- JAXA内サイトが50、関係サイトが16
- データの取得先や、関連情報を掲載しているサイトをまとめています。

「G-Portal」

<https://gportal.jaxa.jp/>

- Search & get product JAXA satellite EO products
- JAXAの地球観測衛星のデータを検索、取得できるサイトです。

The screenshot shows the JAXA for Earth website interface. At the top, there is a navigation bar with the JAXA logo, "Space Technology Directorate | About the use of data > 日本語", and "JAXA support the Sustainable Development Goals" with a corresponding icon. Below the navigation bar is a large banner image of Earth from space with the text "JAXA for Earth - Earth Data Collection by JAXA Satellites -" and a sub-header "To watch over the global environment and human society from space... This site introduces various aspects of the earth using JAXA's research results and data." Below the banner is a filter bar with buttons for "Satellite", "Research Field", "Area", "Application", "Others...", and a "For Beginners" toggle. The main content area displays a grid of site cards. The first card, "G-Portal", is highlighted with a red box. It includes a thumbnail of the G-Portal interface and a description: "G-Portal is a portal system allowing users to search (satellite/sensor/physical quantity), and download products acquired by JAXA's Earth observation satellite." Other visible cards include "ALOS/ALOS2 User Interface Gateway2 (AUIG2)", "Tropical cyclones - JAXA/EORC Tropical Cyclone Database", "JAXA GLOBAL RAINFALL WATCH", "JAXA Realtime Rainfall", "RIKEN Nowcast", "JAXA Climate Rainfall Watch", and "JAXA Realtime weather".

I would like to introduce about G-Portal today.

主にG-Portalについてご紹介します。

Available Products in G-Portal

G-Portalで提供しているプロダクト



Spacecraft (衛星名)	Sensor (センサ名)	Capability (提供内容)
MOS-1/1b	MESSR/VTIR/MSR	Search and Get products (プロダクトの検索及び取得)
JERS-1	VNIR/SWIR/SAR	Search and Get products (プロダクトの検索及び取得)
TRMM	PR/TMI/VIRS/COMB	Search and Get products (プロダクトの検索及び取得)
Aqua	AMSR-E	Search and Get products (プロダクトの検索及び取得)
ADEOS	OCTS/AVNIR	Search and Get products (プロダクトの検索及び取得)
ADEOS-II	AMSR/GLI	Search and Get products (プロダクトの検索及び取得)
GPM	KuPR/KaPR/DPR/GMI/GSMaP	Search and Get products (プロダクトの検索及び取得)
GCOM-W	AMSR2	Search and Get products (プロダクトの検索及び取得)
GCOM-C	SGLI	Search and Get products (プロダクトの検索及び取得)
-	CIRC	Search and Get products (プロダクトの検索及び取得)
ALOS	PRISM/AVNIR-2/PALSAR	Search only (プロダクトの検索)
ALOS-2	PALSAR-2	Search only (プロダクトの検索)
Aqua	MODIS	Search only (プロダクトの検索)
Terra	MODIS	Search only (プロダクトの検索)

Available Geophysical Quantities

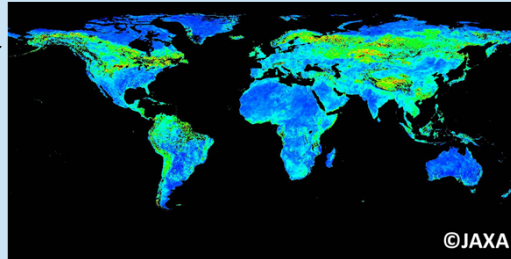
提供しているプロダクト(物理量)

<Atmosphere/大気圏>

計24物理量

- Precipitation/降水
- Cloud/雲
- Radiance/放射
- Water Vapor

/水蒸気



Total : 24

physical quantities

- Aerosol/エアロゾル
- Radiation Balance/放射収支
- Atmospheric Corrected Reflectance/大気補正済反射率

<Terrestrial/陸圏>

計15物理量

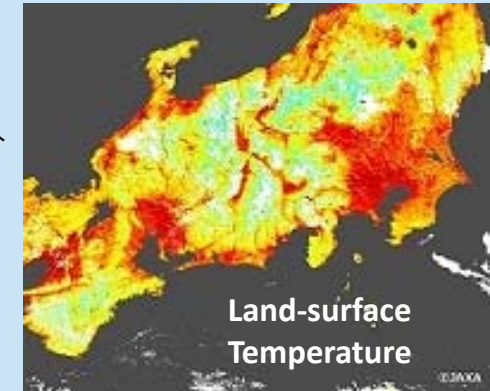
- Snow Pack/積雪
- Soil Moisture

/土壤水分

- Radiance, Reflectance
- Vegetation

/放射輝度・反射率

/植生



Land-surface Temperature

Total

15 physical quantities

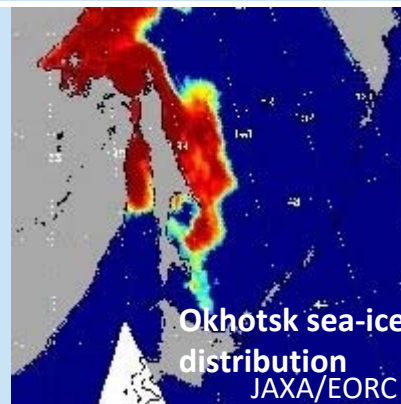
<Cryosphere/雪氷圏>

計8物理量

- Sea Ice/海氷
- Snow Pack/積雪

Total

8 physical quantities



Okhotsk sea-ice distribution
JAXA/EORC

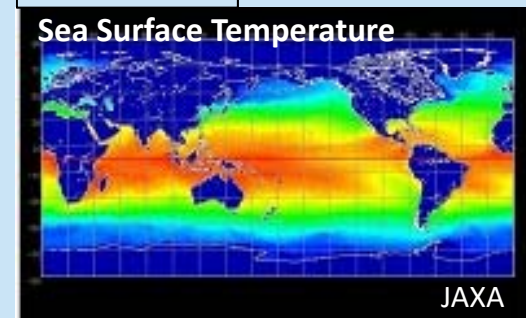
<Ocean/海洋圏>

計8物理量

- Sea Surface Temperature
- Sea Surface Wind/海上風
- Ocean color

/海面水温

/海色



Sea Surface Temperature

JAXA

Total

8 physical quantities

We also provide other products for example the radiance/Brightness temperature.

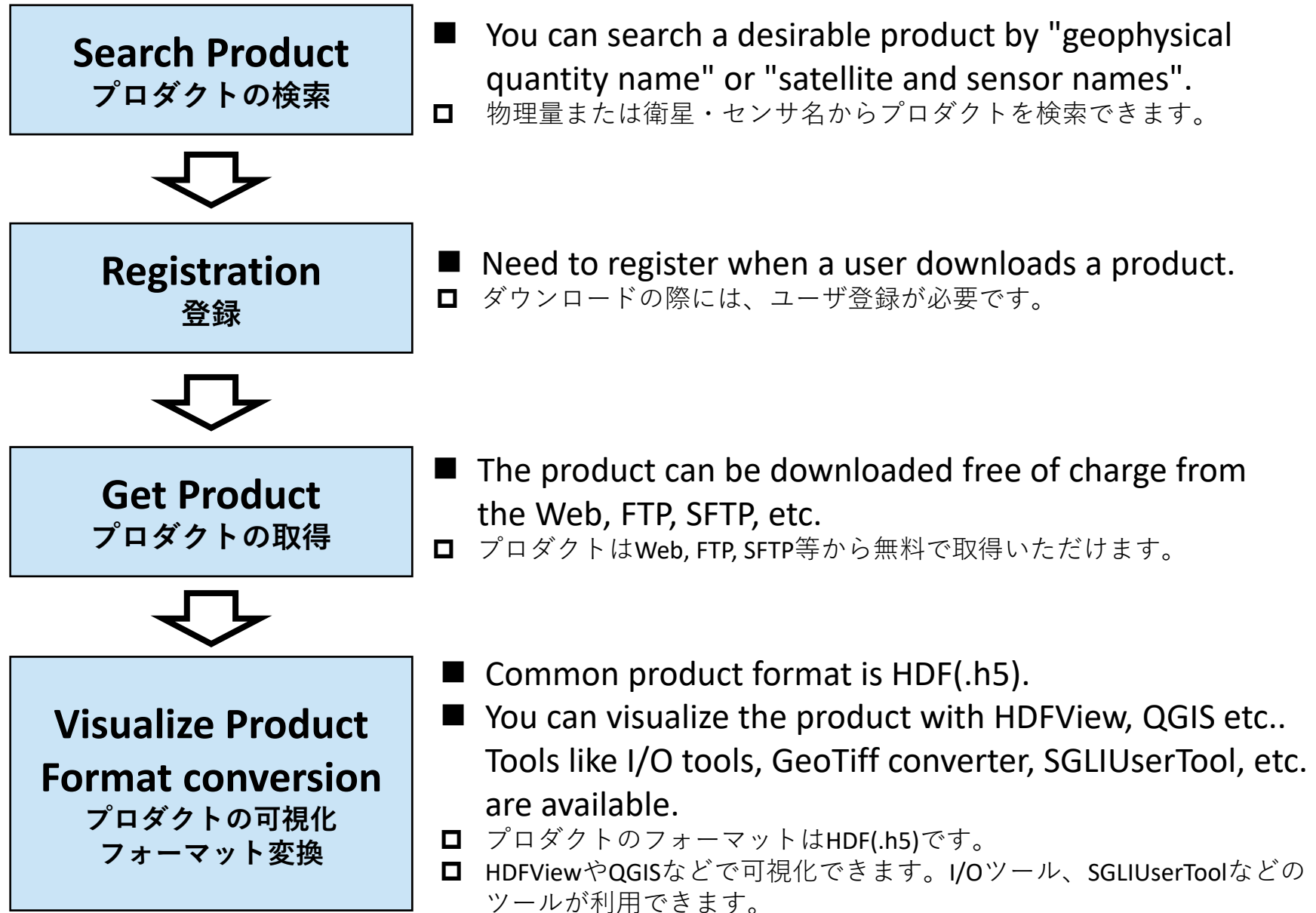
Please refer to the following page. <https://gportal.jaxa.jp/gpr/search?tab=0>

このほかにも、放射輝度・輝度温度などのプロダクトを提供しています。上記ページをご参照ください。

How to Get and Use Data with G-Portal



G-Portalからのデータ取得の流れ



How to use G-Portal?

G-Portalの使い方



Open(ここからG-Portalにアクセスできます)

<https://gportal.jaxa.jp/>

How to use G-Portal?

G-Portalの使い方



The screenshot displays the G-Portal website interface. On the left, there is a navigation menu with options: Physical quantities (precipitation, ocean color, etc.), Spacecraft (spacecraft, sensor, level, etc.), and Direct download (How to download via FTP, etc.). Below this are links for Login, User registration, For first-time users, Product information / operation, Tools / documents, and Support / inquiry / FAQ. The main content area shows a search bar with the text "G-Portal offers earth observations free of charge for use in...". A search filter panel is open, showing "1. Refine your search" with tabs for "Select by physical quantity" and "Select by spacecraft / sensor". The "Select by physical quantity" tab is active, showing a tree view of categories: Atmosphere (Precipitation, Cloud, Water Vapor, Radiation Balance), Aerosol (Aerosol Type, Aerosol Optical Thickness, Aerosol Particle Radius, Aerosol Extinction Coefficient, Single Scattering Albedo), Radiance, Atmospheric Corrected Reflectance, Cryosphere (Sea Ice, Snow Pack), and Terrestrial. A search bar contains the word "Sea" and a "Refine Search" button. A second search filter panel is also shown, with the "Select by spacecraft / sensor" tab active. It shows a search for "Infrared" and a table of results under "Spacecraft, sensors, physical quantities". The table lists products like GCOM-C/SGLI, LEVEL1, LEVEL2, Oceanic sphere, Cryosphere, Cryosphere statistics, Land area, Land area statistics, Atmosphere (L2-CLFG, L2-CLPR, L2-ARNP, L2-ARPL), and Atmosphere global. A "Search" button is at the bottom.

**Product search by physical quantities
物理量からの検索**

**Product search by Spacecraft/ Sensor
衛星/センサからの検索**

From the next page, we'll show how to search an “Aerosol Particle Radius/Aerosol Optical Thickness” product indicating cleanness of the atmosphere as an example.
次ページからエアロゾルプロダクトを例に、取得方法を紹介します。

Ex. Search and Get Aerosol Products

例) エアロゾル製品の検索から取得まで



Free Earth observation data can be used in various fields

G-Portal

Back to Top | For First-time users | Support | Login

Call out saved search criteria Save the search criteria

Change the background map Google Street

Hide the guidance

1. Refine your search 2. Select the period 3. Specify the region

Select by physical quantity **Select by spacecraft / sensor**

1. Setting the criteria

Refine Search by word Infrared, Refine Search

Processing level All Functions All

Spacecraft, sensors, physical quantities		Information, etc.
<input checked="" type="checkbox"/>	▼ GCOM-C/SGLI	
<input type="checkbox"/>	▶ LEVEL1	
<input checked="" type="checkbox"/>	▼ LEVEL2	
<input type="checkbox"/>	▶ Oceanic sphere	
<input type="checkbox"/>	▶ Cryosphere	
<input type="checkbox"/>	▶ Cryosphere statistics	
<input type="checkbox"/>	▶ Land area	
<input type="checkbox"/>	▶ Land area statistics	
<input checked="" type="checkbox"/>	▼ Atmosphere	
<input type="checkbox"/>	▶ L2-CLFG	
<input type="checkbox"/>	▶ L2-CLPR	
<input type="checkbox"/>	▶ L2-ARNP	
<input checked="" type="checkbox"/>	▶ L2-ARPL	
<input type="checkbox"/>	▶ Atmosphere global	

①

Search

Guidance: Refine search

Outline of setting narrowing down of search criteria by spacecraft / sensor

Spacecraft products can be narrowed down by GCOM-W, GPM and other spacecraft and sensors mounted on the spacecraft. You can also select all by checking folders on the tree.

Those products with an icon are downloadable.

Click the icon to view the outline of physical quantities.

Those products with an icon can have specific narrow-down criteria set for the products.

Efficient refine search method

The "Refine by Word" function extends to a predictive search from those words predicting physical quantities defined in G-Portal; i.e. "Precipitation" is predicted by the terms rain and rainfall predict.

Processing levels L1 to L4 can be selected using the "Processing Level" function

Using "Function" to products offered by G-Portal can be selected. "Downloadable" and "Search only" can be specified. However, because downloadable and non-downloadable products are mixed in a single physical quantity displayed on screen, the result of narrowing down is not shown on the display. It works as narrow-down criteria in a search.

Select the product you want to get on "Select by Spacecraft/sensor" tab. (①)
(In this case, select L2-ARPL.)

「衛星・センサから選ぶ」タブを開き、製品を選択します(①)。今回の場合はL2-ARPLです。

Ex. Search and Get Aerosol Products.

例) エアロゾルプロダクトの検索から取得まで



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G-Portal

Back to Top | For First-time users | Support | Login

Call out saved search criteria Save the search criteria

Change the background map Google Street

Hide the guidance

1. Refine your search 2. Select the period 3. Specify the region

Detailed criteria setting

L2-ARPL Detailed search criteria

Product Version:

1

Total Quality Code:

Good Fair

Cloud Cover Percentage :

Please enter a blank to search the products without Cloud Cover Percentage.

Cloud cover(%)

Image data Resolution:

1km

Orbit Direction:

Ascending Descending unspecified

The Area Number Of Tile:

h: 0 ~ 36

v: 0 ~ 18

Granule Id:

ID

ProcessTimeUnit:

01D

1. Setting the criteria

Refine Search by word Infrared,

Processing level All Functions All

Spacecraft, sensors, physical quantities		Information, etc.
<input checked="" type="checkbox"/>	▼ GCOM-C/SGLI	
<input type="checkbox"/>	▶ LEVEL1	
<input checked="" type="checkbox"/>	▼ LEVEL2	
<input type="checkbox"/>	▶ Oceanic sphere	
<input type="checkbox"/>	▶ Cryosphere	
<input type="checkbox"/>	▶ Cryosphere statistics	
<input type="checkbox"/>	▶ Land area	
<input type="checkbox"/>	▶ Land area statistics	
<input checked="" type="checkbox"/>	▼ Atmosphere	
<input type="checkbox"/>	▶ L2-CLFG	<input type="button" value="i"/> <input type="button" value="g"/>
<input type="checkbox"/>	▶ L2-CLPR	<input type="button" value="i"/> <input type="button" value="g"/>
<input type="checkbox"/>	▶ L2-ARNP	<input type="button" value="i"/> <input type="button" value="g"/>
<input checked="" type="checkbox"/>	▶ L2-ARPL	<input type="button" value="i"/> <input checked="" type="button" value="g"/>
<input type="checkbox"/>	▶ Atmosphere global	

Click on the gear button(②)to add detailed filtering parameters like quality, cloud cover, image resolution, orbit direction, etc. (③). Then, click on “2. Select the period”(④) tab. 歯車マーク②をクリックし、詳細を設定します。その後「2.期間指定」(④)に進みます。

Ex. Search and Get Aerosol Products.

例) エアロゾルプロダクトの検索から取得まで

Free Earth observation data can be used in various fields

Free Earth observation data can be used in various fields

G-Portal Back to Top | For First-time users | Support | Login

Call out saved search criteria Save the search criteria Change the background map Google Street Hide the guidance

1. Refine your search 2. Select the period 3. Specify the region

Specify the period Specify the season

2. Specify the observation date

Search the period entered.
Enter the observation date (YYYY/MM/DD) or specify on the table below by clicking.

Observed Year, Month and Day1 2020/05/17 ~ 2020/05/20 Clear

Add observation date to search for

1987 Jul 1989 Jul 1991 Jul

GCOM-C SGLI

2017 2018 2019 2020 2021 2022

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

13 14 15 16 17 18 19 20 21 22 23 24 25 26

Wed Thu Fri Sat Sun Mon Tue Wed Thu Fri Sat Sun Mon Tue

Today

When entering the period, the following date selection dialog is displayed. It is also possible to use this dialog.

2017/07/20 ~ 2017/07/27 クリア

日付選択 本日

2014 2015 2016 2017 2018 2019

1月 2月 3月 4月 5月 6月 7月 8月 9月 10月 11月 12月

13 14 15 16 17 18 19 20 21 22 23 24 25 26

木 金 土 日 月 火 水 木 金 土 日 月 火 水

Search

Set the period(⑤) and click on “3. Specify the region”(⑥) tab.

The period can be also input with the bar chart.

⑤で観測期間を設定し、その後「3.範囲指定」(⑥)に進みます。

なお、期間指定は期間グラフからマウスで選択することもできます。

Ex. Search and Get Aerosol Products.

例) エアロゾルプロダクトの検索から取得まで

Free Earth observation data can be used in various fields

G-Portal

Back to Top | For First-time users | Support | Login

Call out saved search criteria | Save the search criteria

Change the background map Google Street

Show the guidance

1. Refine your search | 2. Select the period | 3. Specify the region

All | Specify the rectangle | Specify the point | Specify the circle

Specify the polygon | Specify the place

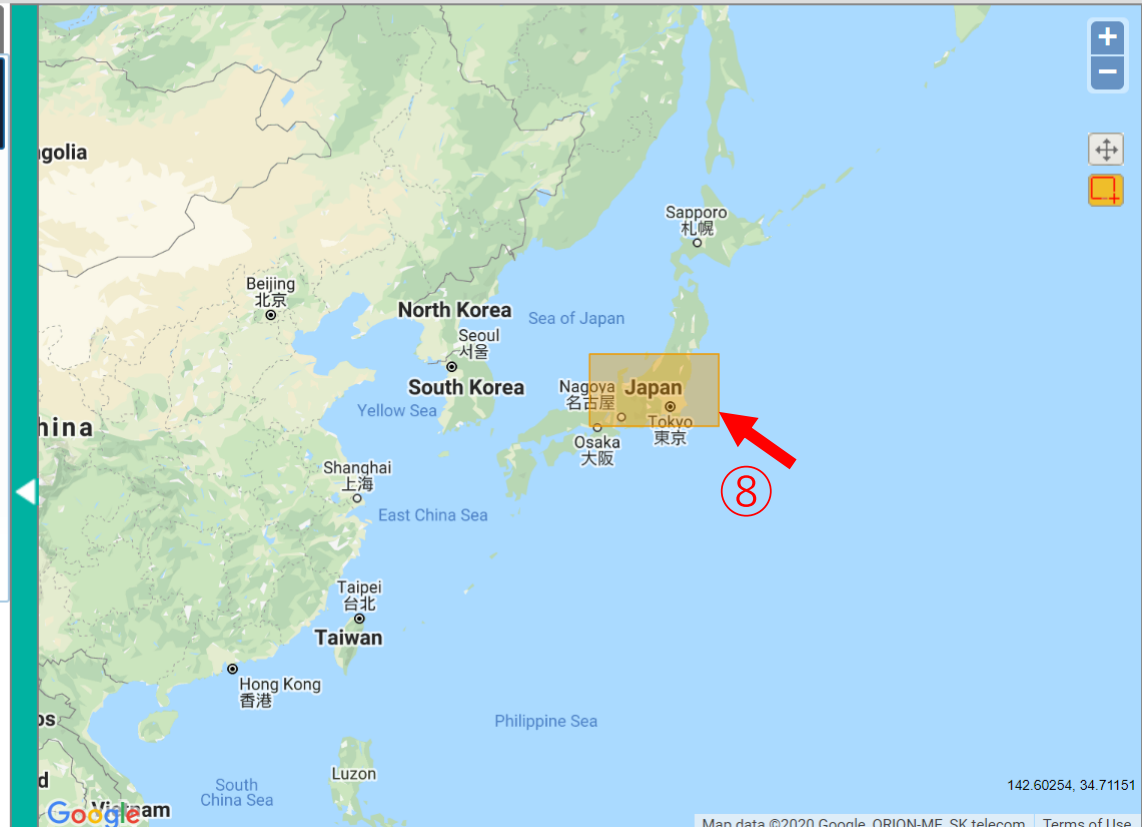
3. Set the region of interest

Specify the rectangle by the highest/lowest latitude and longitude. You can also specify by dragging on the map.

Highest latitude and longitude

Lowest latitude and longitude

Set Clear the settings



Enter the latitude and longitude values directly(⑦), or select an area on the map(⑧) to set a search region. Then, click the “Search” button(⑨) to get search results.

緯度経度を直接⑦の欄に入力するか、右側の地図上で期間を選択する(⑧)ことで、観測範囲を設定します。ここまで完了したら、⑨の検索ボタンをクリックします。

Ex. Search and Get Aerosol Products.

例) エアロゾル製品の検索から取得まで



Granule ID	GC1SG1_20200517D01D_T0528_L2SG_ARPL
Processing Date (UTC)	2020-05-17 15:17:08.00
Processing Level	L2
Observation Starting Date (UTC)	2020-05-17 01:07:04.80
Observation Ended Date (UTC)	2020-05-17 02:53:02.40
Platform Short Name	GCOM-C
Sensor	SGLI
Sensor Operational Mode	NOMINAL
Product File	https://gportal.jaxa.jp/download/standard/GCOM-C.SGLI/L2.ATMOS.ARPL/1/2020/05/17/GC1SG1_20200517D01D_T0528_L2SG_ARPLK_1001.h5
Product size(MB)	1
Product version	1
Total Quality Code	Good
Cloud Coverage (%)	71
Compression	Compressed
Physical Quantity	Aerosol Particle Radius/Aerosol Optical Thick
Product resolution	1km
Map Projection	EQA
Orbit Direction	Descending
Tile number	0528
Statistic period	01D

Spacecraft / sensor	Observation starting date(UTC)	Observation ended date(UTC)	Details	Data manipu
GCOM-C/SGLI	2020-05-17 01:06:25.20	2020-05-17 01:12:18.00	Details	Download Pr
GCOM-C/SGLI	2020-05-17 01:07:04.80	2020-05-17 02:53:02.40	Details	Download Pr
GCOM-C/SGLI	2020-05-18 00:42:18.00	2020-05-18 02:26:09.60	Details	Download Pr
GCOM-C/SGLI	2020-05-18 02:20:38.40	2020-05-18 02:26:31.20	Details	Download Pr
GCOM-C/SGLI	2020-05-19 01:53:52.80	2020-05-19 01:59:45.60	Details	Download Pr

If you have a product that you would like to verify details, click on the “Details” button(10) of that data. You can see the details window(11).

When you are satisfied with the details, please close this window.

検索した製品の詳細を知りたい場合は、詳細ボタン(10)をクリックすると、別ウィンドウ(11)で詳細な情報をご覧いただけます。

Ex. Search and Get Aerosol Products.

例) エアロゾルプロダクトの検索から取得まで



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G-Portal

Back to Top | For First-time users | Support | Login

Call out saved search criteria Save the search criteria

Change the background map Google Street

Show the guidance

1. Refine your search 2. Select the period 3. Specify the region

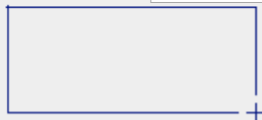
All Specify the rectangle Specify the point Specify the circle

Specify the polygon Specify the place

3. Set the region of interest

Specify the rectangle by the highest/lowest latitude and longitude. You can also specify by dragging on the map.

Highest latitude and longitude
(38.1057426225, 142.602539062)



Lowest latitude and longitude
(34.7115107153, 135.043945312)

Set Clear the setting

Search

Observation starting date(UTC)	Observation ended date(UTC)	Details	Data manipulation	My List
2020-05-17 01:06:25.20	2020-05-17 01:12:18.00	Details	Download Processing	Add to My List
2020-05-17 01:07:04.80	2020-05-17 02:53:02.40	Details	Download Processing	Add to My List
2020-05-18 00:42:18.00	2020-05-18 02:26:09.60	Details	Download Processing	Add to My List
2020-05-18 02:20:38.40	2020-05-18 02:26:31.20	Details	Download Processing	Add to My List
2020-05-19 01:53:52.80	2020-05-19 01:59:45.60	Details	Download Processing	Add to My List

Click the “Download” button(12) to download a product.

Click the “Processing” button(13) to convert the file format or cutout of a part of the product.

Click the “download” button(14) to save your search results in your list.

⑫のダウンロードボタンで、プロダクトを取得できます。⑬のボタンで、プロダクトのフォーマット変換や切り出しが指定できます。⑭のボタンで、結果を自分のリストに保存できます。

Additional Information - Tools and Related Documents

ツールやドキュメント情報について



- ① You can be registered as a user from here.
こちらからユーザ登録ができます。
- ② The demonstration movies on how to search products and a list of available physical quantities are available.
プロダクトの取得方法を説明した動画や、ご利用いただけるプロダクトについて紹介しています。
- ③ Information about products and operational plans are provided.
プロダクトや、衛星運用に関する情報を公開しています。

- ④ Support tools for using the products, related documents and links to related information are available.

プロダクトを利用する際に便利なツールや関連するドキュメント類を公開しています。

- ⑤ You could check the manual of G-Portal, the FAQ and contact information.

G-Portalのマニュアルや、FAQ等を公開しています。

- ⑥ You can check the maintenance information etc. on this page.

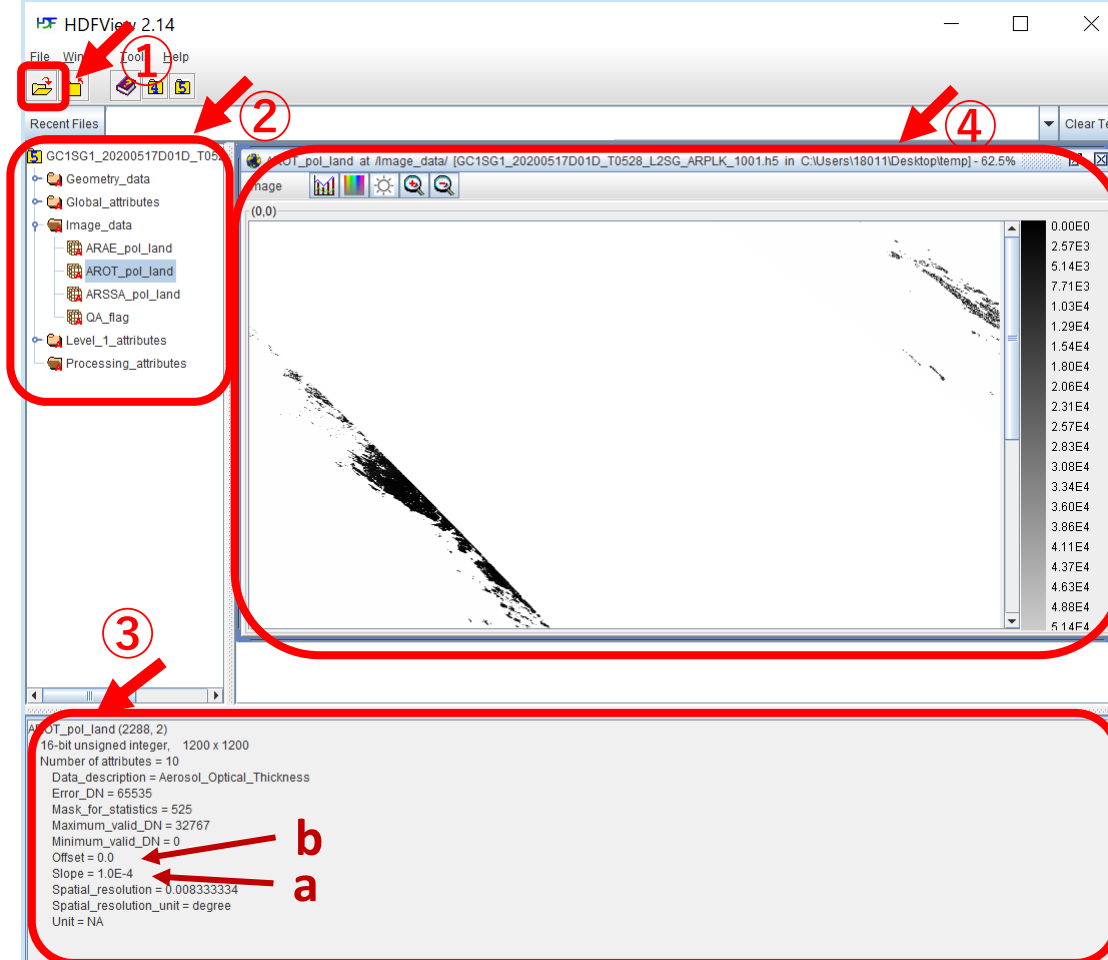
メンテナンス情報等を掲載しています。

How to Use the Data

データの利用方法



<HDF View> <https://gportal.jaxa.jp/gpr/information/tool>



- ① Open the file and select the HDF file you want to review.
“file”を開き、参照したいHdfファイルを選択します。
- ② Then, the details of the product you have selected will be displayed.
その後②のウィンドウに、先ほど選択したプロダクトの詳細が表示されます。
- ③ The details of the attributes and image data you have selected will be displayed in this window.
アトリビュートやイメージデータの詳細が、③のウィンドウに表示されます。

Geophysical Quantities(物理量) = DN * slope(a) + offset(b)

※ Information of Slope(a) and offset(b) can also be obtained from ATBD(Algorithm Theoretical Basis Documents).

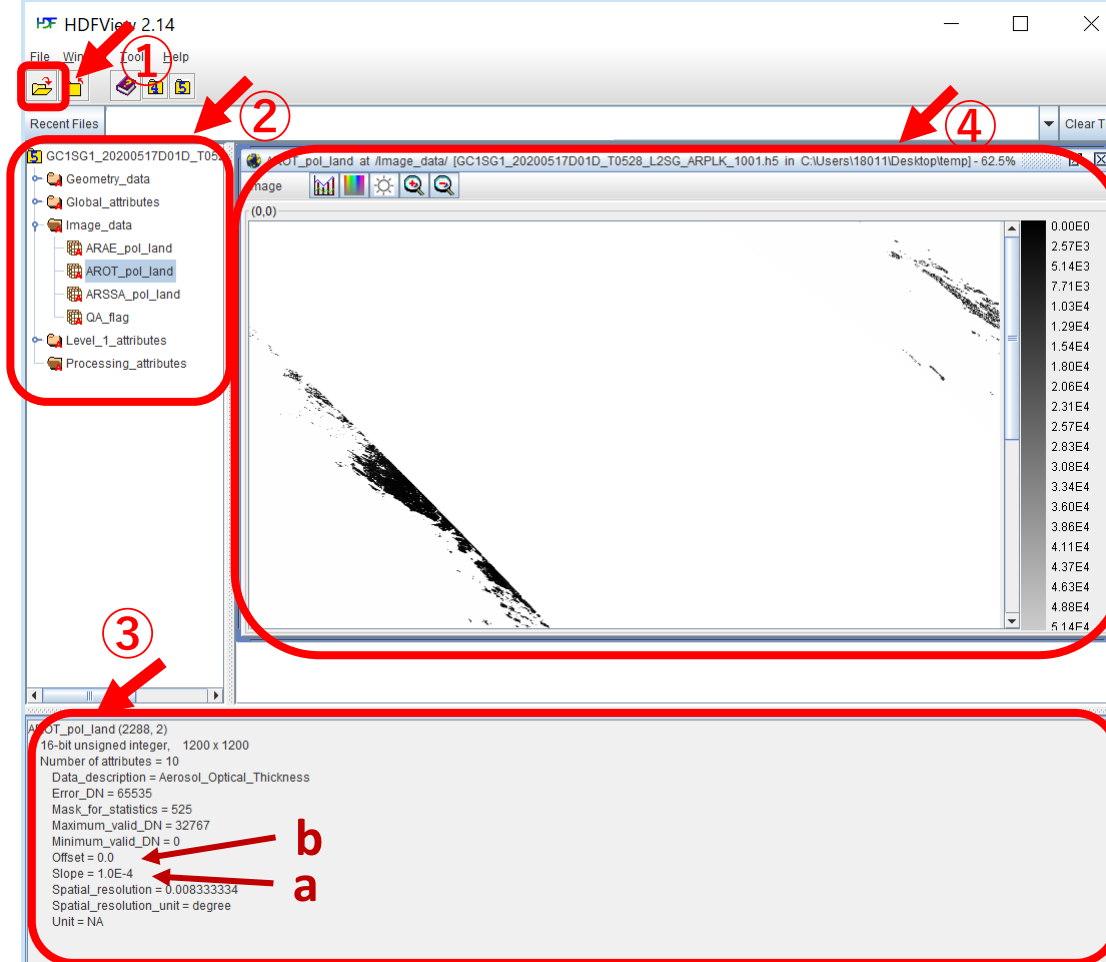
※ Slope(a)やoffset(b)は、ATBDからも取得することができます。

How to Use the Data

データの利用方法



<HDF View> <https://gportal.jaxa.jp/gpr/information/tool>



④ Right-click on the “image_data” item (②) and select “Open As”. When you select the spreadsheet, a numerical value will be displayed, and when you click “image”, an image will be displayed on ④.

②のウィンドウ中の“image_data”の項目を右クリックし、“Open_As”を選択します。
その後、“spreadsheet”を選択すると、プロダクトが数値で④の画面中に表示されます。
“image”を選択するとプロダクトが画像で④の画面中に表示されます。

If you get GeoTiff, you can also use GIS software such as QGIS to read the data.

GeoTiffに変換したデータがあれば、QGISなどのGISソフトウェアで読み込み、表示することができます。

You could check the manual of G-Portal and the FAQ from following URL.

<https://gportal.jaxa.jp/gpr/information/support>

G-PortalのマニュアルやFAQは、上記リンクよりご覧いただけます。

Please refer to the above page. And if you have any more questions, please contact us below.

*Depending on the status and content of your inquiry, it may take some time to respond.

まずは上記ページをご覧いただき、さらにご不明な点やご質問がございましたら、以下のサポートデスクまでご連絡ください。

※お問い合わせの状況や内容により、回答までにお時間をいただく場合があります。

Contact/お問合せ : Japan Aerospace Exploration Agency G-Portal support desk

E-mail : z-gportal-support[*]ml.jaxa.jp

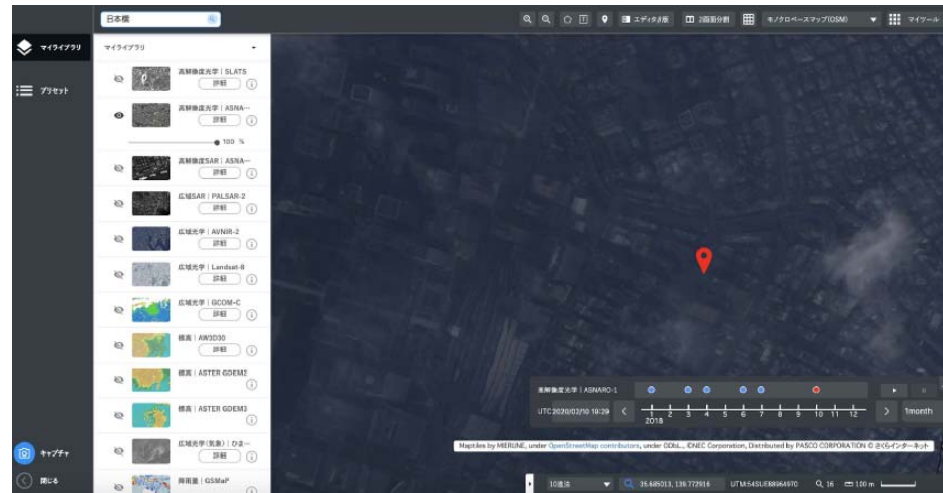
(Note) Please change [*] to @. /*]を@に置き換えてください。

Tellus

日本発の衛星データプラットフォーム Tellus (テルース)



Tellus



登録無料で衛星データを利用できます！ 「[Tellus](#)」で検索ください。

Tellus

Tellusを使った衛星データの解析手順、
分析実践などを学ぶことができる

Tellus Trainer



<https://tellusxdp.github.io/tellus-trainer/index.html>

プログラミングの基礎知識を
学ぶことができる

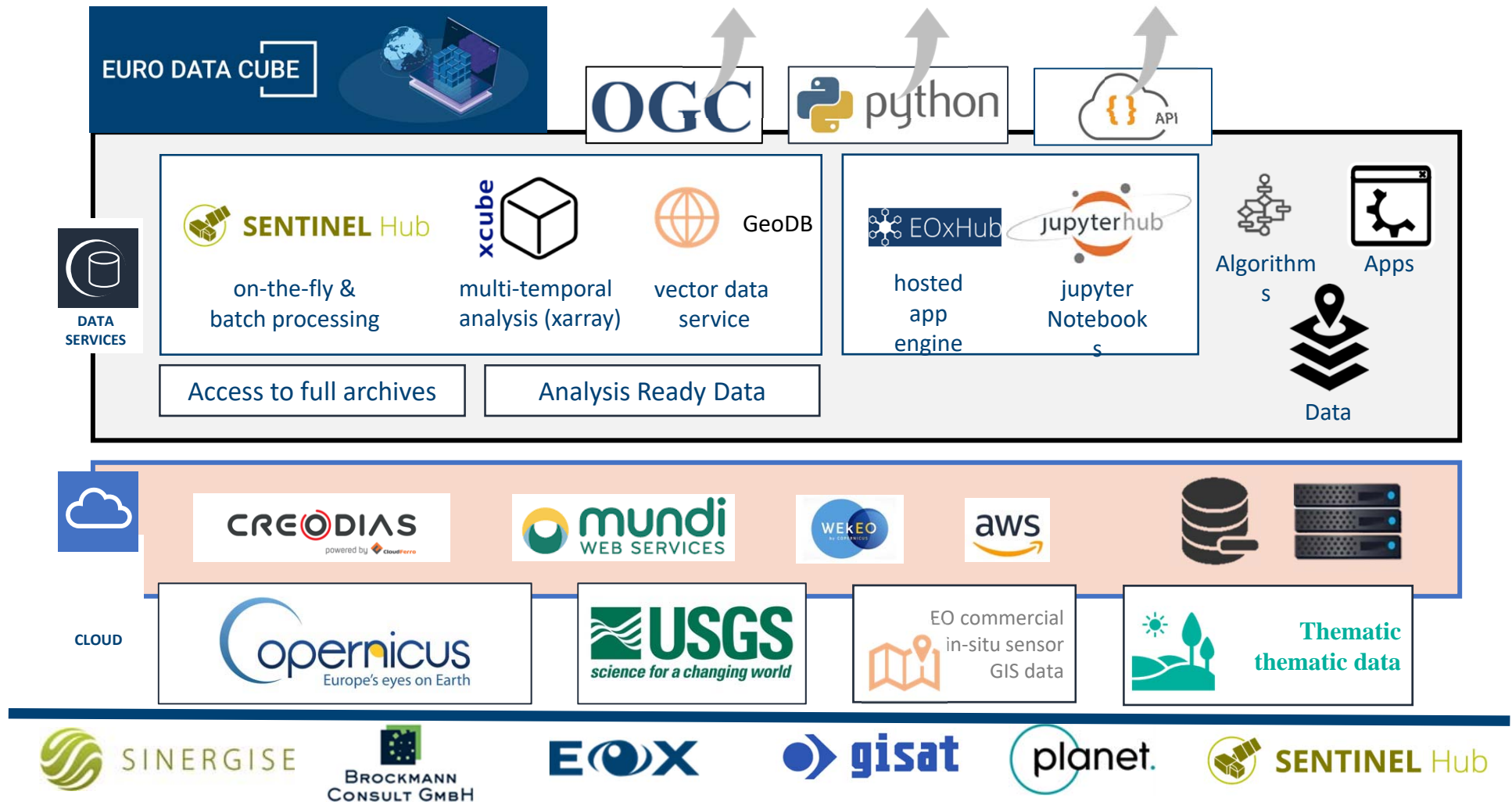
Tellus × TechAcademy



<https://tellusxdp.github.io/start-python-with-tellus/index.html>

EURO DATA CUBE

The short webinar on Euro Data Cube here:
<https://youtu.be/I4bW0L85IN8>



05/28/2020

本ハッカソン用にJAXA衛星データを搭載。
 GCOM-C (エアロゾル、地表面温度、植生指数/NDVI)
 ALOS-2(ScanSARデータ)

Euro Data Cube : <https://eurodatacube.com/>

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**Thank you for your time and attention.
ご清聴ありがとうございました。**