

Tutorial: Como fazer download de dados do EARTHDATA - NASA?

Por: Lucas Rangel Coringa Barros

Este tutorial fornece um guia passo a passo para o download de dados do EARTHDATA da NASA. Utilizaremos como exemplo o produto MYD04_3K. O MYD04_3K é um produto do MODIS do satélite Aqua. Para baixar outros produtos, basta procurar pelo nome correspondente (por exemplo, MOD04_3K, que é o produto do MODIS do satélite Terra).

A documentação do MYD04_3K pode ser encontrada [aqui](#) e a documentação do MOD04_3K pode ser encontrada [aqui](#).

Observação: Crie sua conta no EarthData em <https://urs.earthdata.nasa.gov/home>. Sempre que possível, utilize uma conta institucional, pois isso pode facilitar a aprovação da sua conta e a pesquisa de uso dos dados.

The screenshot shows a Google search results page. The search query "modis earthdata" is entered in the search bar. Below the search bar, there are several filter buttons: Todas, Imagens, Vídeos, Notícias, Shopping, Maps, Web, Mais, and Ferramentas. The "Todas" button is highlighted with a black underline. The search results list the first result as "Earthdata (.gov)" with a link to "https://www.earthdata.nasa.gov". A red arrow points from the left towards this result. The snippet below the link reads: "MODIS | Earthdata The Moderate Resolution Imaging Spectroradiometer (MODIS) continually collects data in 36 spectral channels with global coverage every 1 to 2 days."

Passo 1: Clique em “Find Data”



The Moderate Resolution Imaging Spectroradiometer (MODIS) continually collects data in 36 spectral channels with global coverage every 1 to 2 days. Its exceptionally broad spectral range enables MODIS data to be used in studies across numerous disciplines, including vegetative health, changes in land cover and land use, oceans and ocean biology, sea surface temperature, and cloud analysis. It also is used extensively for monitoring fires and natural hazards along with oil spills. An important attribute of MODIS data is the availability of MODIS data products in real-time and near real-time. Direct broadcast stations around the world download raw MODIS data in real-time directly from the satellite, while NASA's Land, Atmosphere Near Real-time Capability for EOS (LANCE) provides several MODIS products within three hours of satellite observation.

MODIS at the Data Archives

[GHRC DAAC](#) [LAADS DAAC](#) [LP DAAC](#) [NSIDC DAAC](#) [OB.DAAC](#)

Specifications

Sensor Type: Spectrometers/Radiometers

Sensor Subtype: Imaging Spectrometers/Radiometers

Orbit

Altitude: 705 km

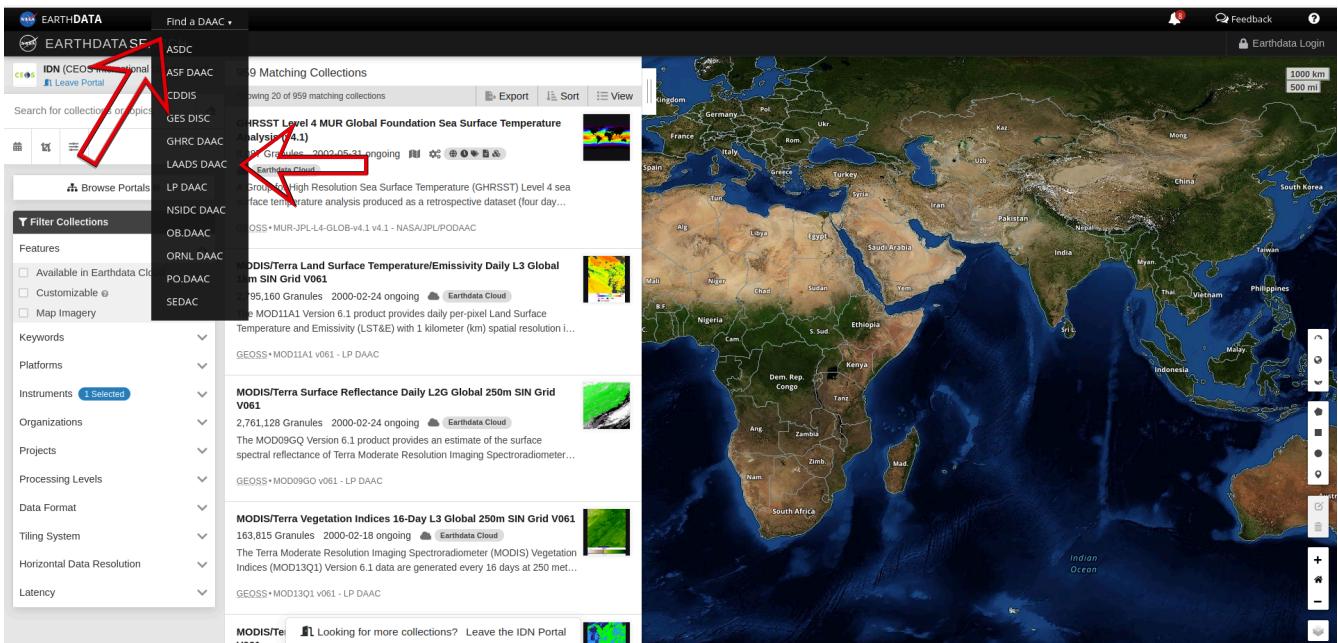
Inclination: 98 deg°

Resolution

Spatial: 250 m, 500 m, 1000 m, 5600 m

Spectral: 36 spectral bands ranging in wavelength from 0.4

Passo 2: Você será redirecionado para uma nova interface. No canto superior esquerdo da tela, procure a opção "Find a DAAC" e selecione "LAADS DAAC".



Find a DAAC ▾

ASDC

ASF DAAC

CDDIS

GES DISC

GHRC DAAC

LAADS DAAC

LP DAAC

NSIDC DAAC

OB.DAAC

ORNL DAAC

PO.DAAC

SEDAC

19 Matching Collections

Showing 20 of 959 matching collections

[Export](#) [Sort](#) [View](#)

GHRSST Level 4 MUR Global Foundation Sea Surface Temperature Analysis (4.1)

Granules: 2002-05-31 ongoing

[Earthdata Cloud](#)

Global High Resolution Sea Surface Temperature (GHRSST) Level 4 sea surface temperature analysis produced as a retrospective dataset (four day...

GEOSS-MUR-JPL-L4-GLOB-v4.1 - NASA/JPL/PODAAC

95,160 Granules 2000-02-24 ongoing

[Earthdata Cloud](#)

MODIS/Terra Land Surface Temperature/Emissivity Daily L3 Global SIN Grid V061

2,761,128 Granules 2000-02-24 ongoing

[Earthdata Cloud](#)

GEOSS-MOD11A1 v061 - LP DAAC

MOD11A1 Version 6.1 product provides daily per-pixel Land Surface Temperature and Emissivity (LST&E) with 1 kilometer (km) spatial resolution i...

MODIS/Terra Surface Reflectance Daily L2G Global 250m SIN Grid V061

2,761,128 Granules 2000-02-24 ongoing

[Earthdata Cloud](#)

The MOD09GQ Version 6.1 product provides an estimate of the surface spectral reflectance of Terra Moderate Resolution Imaging Spectroradiometer...

GEOSS-MOD09GQ v061 - LP DAAC

MODIS/Terra Vegetation Indices 16-Day L3 Global 250m SIN Grid V061

163,815 Granules 2000-02-18 ongoing

[Earthdata Cloud](#)

The Terra Moderate Resolution Imaging Spectroradiometer (MODIS) Vegetation Indices (MOD13Q1) Version 6.1 data are generated every 16 days at 250 met...

GEOSS-MOD13Q1 v061 - LP DAAC

MODIS/Terra Looking for more collections? Leave the IDN Portal [V061](#)

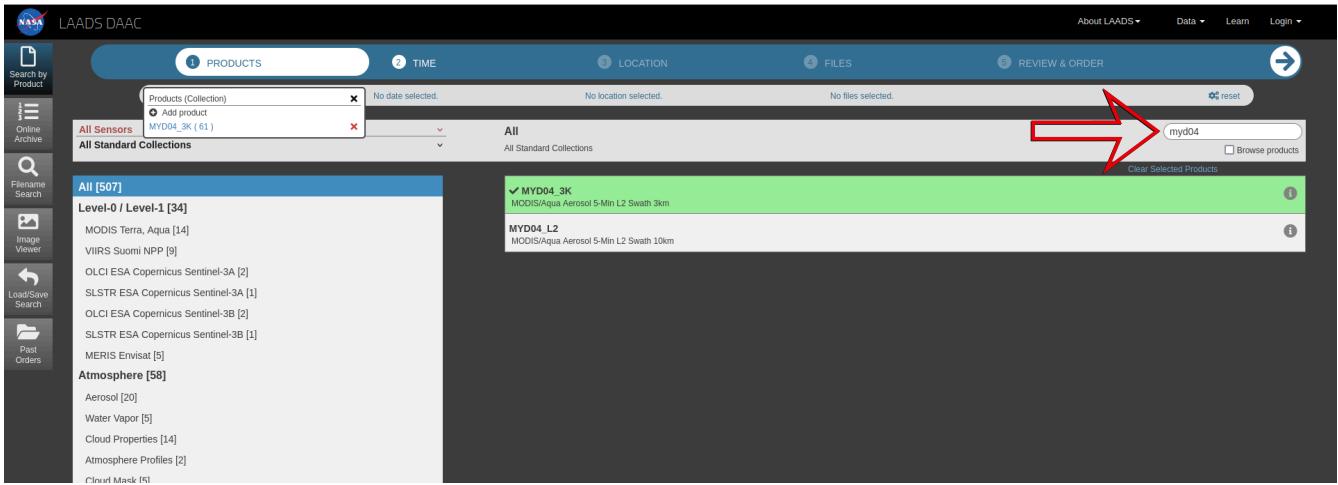


The screenshot shows the EARTHDATA Search interface. In the top left, there's a NASA logo and the text "EARTH DATA". A dropdown menu "Find a DAAC" is open, showing options like "ASD", "CDDIS", "GES DISC", "GHRC DAAC", "LAADS DAAC", "LP DAAC", "NSIDC DAAC", "OB.DAAC", "ORNL DAAC", "PO.DAAC", and "SEDAC". Below this, a search bar contains "Search for collections or topics". On the left, there's a sidebar with "Browse Portals" and "Filter Collections" sections. The "Filter Collections" section includes checkboxes for "Available in Earthdata Cloud", "Customizable", and "Map Imagery". The main area displays "959 Matching Collections" with a table of results. The first result is "GHRSST Level 4 MUR Global Foundation Sea Surface Temperature Analysis (v4.1)", which is highlighted with a red arrow. It shows details like "8,679 Granules 2002-05-31 ongoing" and a "Earthdata Cloud" button. Other results include "MODIS/Terra Land Surface Temperature/Emissivity Daily L3 Global 1km SIN Grid V061" and "GLOSS•MUR-JPL-L4-GLOB-v4.1 v4.1 - NASA/JPL/PODAAC".

Passo 3: Selecione “Find Data” novamente.

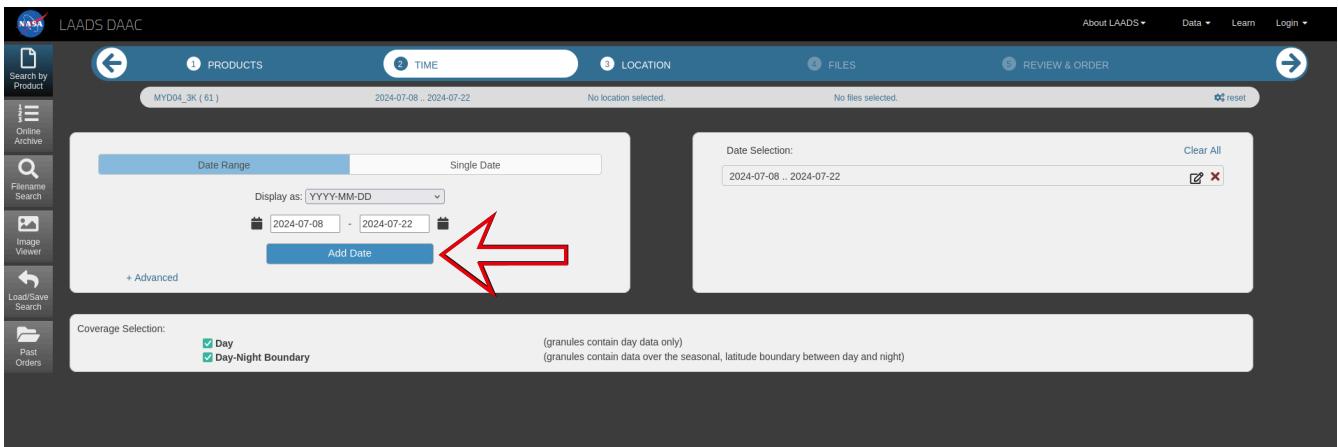
The screenshot shows the LAADS DAAC website. At the top, there's a header with the NASA logo, "EARTH DATA", and "Other DAACs". Below the header is a banner featuring a laptop and clouds, with the text "Your Source for Level-1 and Atmospheric Data" and "Providing Access to Global Science Data Projects". To the right are "View Data" and "Find Data" buttons. A callout box in the center says "LAADS DAAC Migrates to the Cloud" with a "Learn more" link. Below the banner are six categories: "Missions" (satellite icon), "Level 0 & 1" (globe icon), "Atmosphere" (cloud with sun icon), "Airborne" (airplane icon), "Land" (trees icon), and "Applications" (people working on a globe icon). At the bottom, a note states: "LAADS DAAC primarily archives and distributes data on clouds, water vapor, and aerosols in Earth's atmosphere as well as key instrument data for NASA, NOAA and European Space Agency missions. LAADS DAAC also serves as a backup source for MODIS and VIIRS land products."

Passo 4: A partir deste ponto, você passará por cinco etapas. Na primeira, selecione o produto que deseja baixar. Como exemplo, utilizaremos o MYD04_3K. Procure por esse produto na barra de busca, selecione-o e prossiga para a etapa 2.



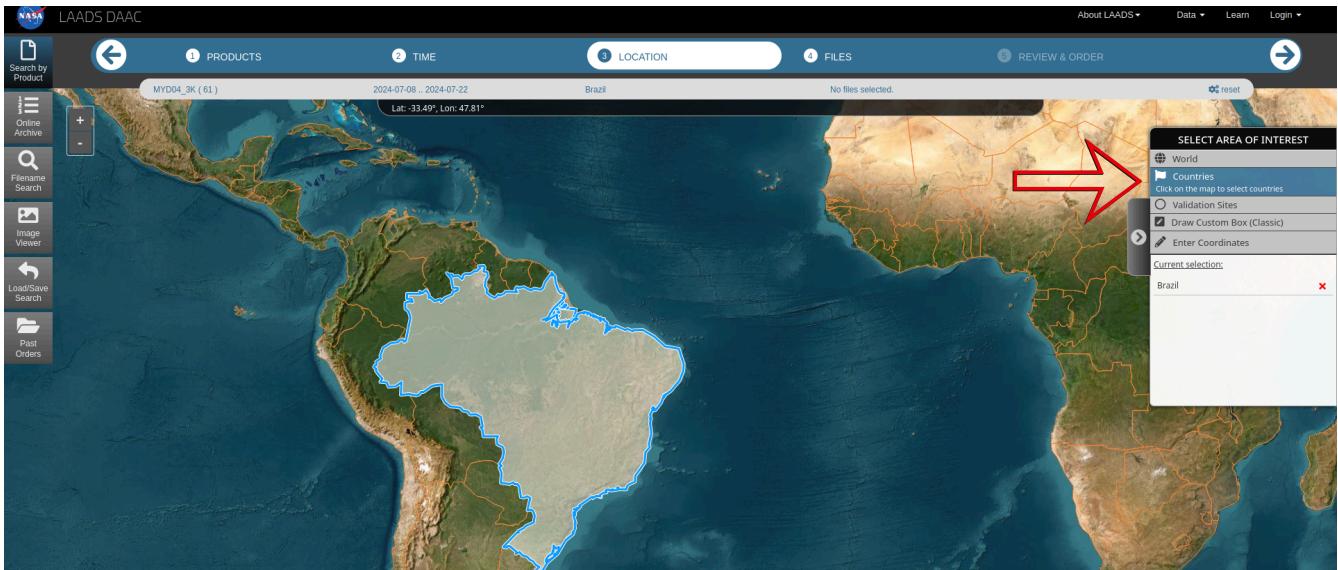
The screenshot shows the LAADS DAAC search interface. On the left sidebar, there are various search filters like 'Search by Product', 'Online Archive', 'Filename Search', 'Image Viewer', 'Load/Save Search', and 'Past Orders'. The main search area has tabs for 'PRODUCTS', 'TIME', 'LOCATION', 'FILES', and 'REVIEW & ORDER'. In the 'PRODUCTS' tab, a search bar contains 'myd04'. Below it, a dropdown menu shows 'Products (Collection)' selected, with 'Add product' and 'MYD04_3K (61)' listed. To the right, a list of collections is shown, with 'MYD04_3K' highlighted in green. Other collections include 'MODIS Terra, Aqua [14]', 'VIIRS Suomi NPP [9]', 'OLCI ESA Copernicus Sentinel-3A [2]', 'SLSTR ESA Copernicus Sentinel-3A [1]', 'OLCI ESA Copernicus Sentinel-3B [2]', 'SLSTR ESA Copernicus Sentinel-3B [1]', 'MERIS Envisat [5]', 'Atmosphere [58]', 'Aerosol [20]', 'Water Vapor [5]', 'Cloud Properties [14]', 'Atmosphere Profiles [2]', and 'Cloud Mask [5]'. A red arrow points to the search bar.

Passo 5: Na etapa 2, selecione o intervalo de tempo para o download dos dados. Neste exemplo, estamos escolhendo o período de 08 de julho de 2024 a 22 de julho de 2024. Na caixa acima, você pode escolher o formato de organização dos dados temporais. Neste caso, os dados estão organizados em ano-mês-dia. Depois de fazer isso, clique em "Add Date" e prossiga para a próxima etapa.

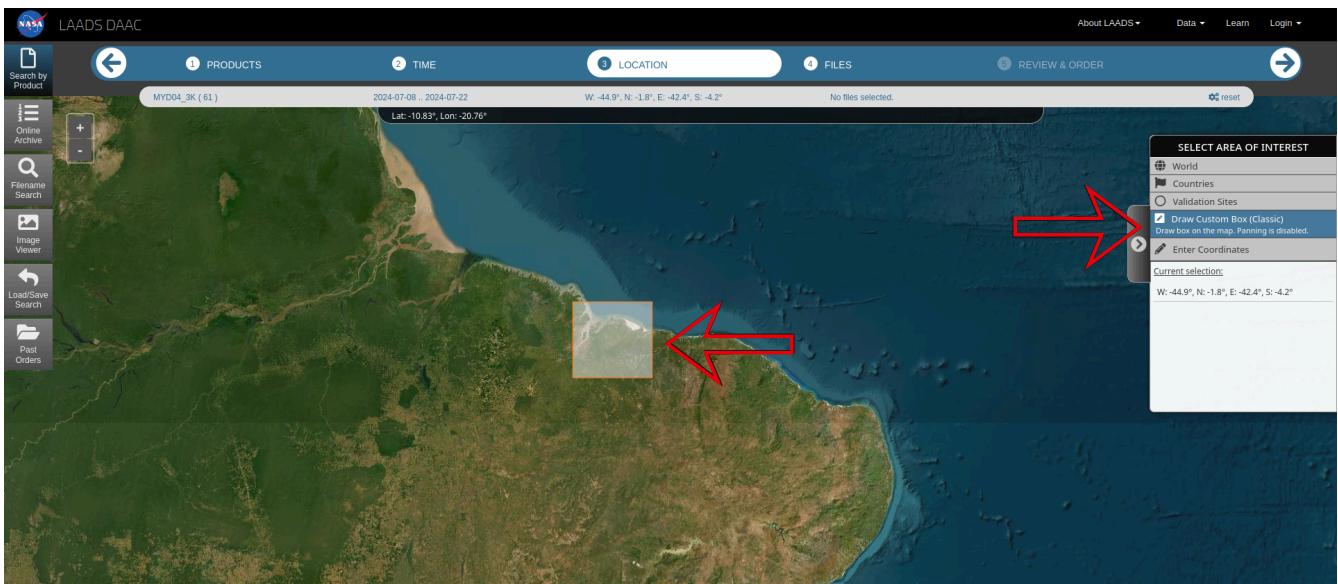


The screenshot shows the LAADS DAAC search interface at the date selection step. The left sidebar remains the same. The main area shows a 'Date Range' input field with '2024-07-08 .. 2024-07-22' and a 'Single Date' button. Below it is a 'Display as:' dropdown set to 'YYYY-MM-DD' with two date input fields. A red arrow points to the 'Add Date' button below these fields. To the right, there's a 'Date Selection' panel with a 'Clear All' button and a checked checkbox for the date range. At the bottom, there's a 'Coverage Selection' section with checkboxes for 'Day' and 'Day-Night Boundary'. A small note says '(granules contain day data only)' for 'Day' and '(granules contain data over the seasonal, latitude boundary between day and night)' for 'Day-Night Boundary'.

Passo 6: Na etapa 3, selecione as áreas de onde os dados serão coletados. Você pode, por exemplo, selecionar um país inteiro, como mostrado no exemplo abaixo.



Ou você pode selecionar a área de interesse desenhando um quadrado sobre ela. Todos os dados dentro desse quadrado serão coletados. Também é possível selecionar a área por meio de coordenadas geográficas, conforme sua preferência.



Passo 7: Na etapa 4, seus dados serão processados e você poderá visualizar a lista de dados gerados e a quantidade de dados disponíveis. Isso é importante, pois há um limite na quantidade de dados que você pode baixar de uma vez. Se o período de interesse for grande, sugiro dividi-lo em intervalos menores e fazer o download em partes. Por exemplo, se precisar coletar dados de 5 anos, solicite 10 downloads, cada um cobrindo um período de 6 meses.

The screenshot shows the LAADS DAAC interface with the following details:

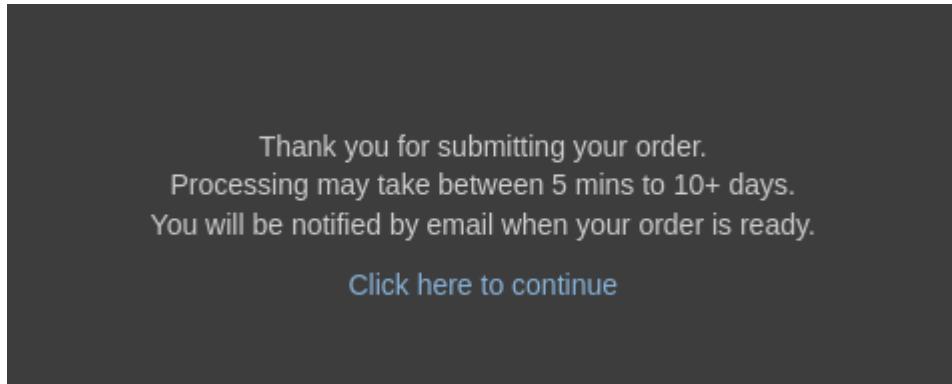
- Header:** LAADS DAAC, Search by Product, Online Archive, Filename Search, Image Viewer, Load/Save Search, Past Orders.
- Section 1 (PRODUCTS):** MYD04_3K (61), 2024-07-08 .. 2024-07-22.
- Section 2 (TIME):** W: -44.9°, N: -1.8°, E: -42.4°, S: -4.2°.
- Section 3 (LOCATION):** 22 files selected.
- Section 4 (FILES):** Query Results, Selected (22), Images.
- List of Files:** A table with columns: Filename, Product (collection), Date / Time, Download. The list contains 22 entries, each with a file name like MYD04_3K_A2024190.1620.061.20241911151225.hdf and a corresponding product collection like MYD04_3K (61).

Passo 8: Nesta etapa, você fará o pedido ao portal para que seus dados sejam processados e disponibilizados para download gratuito. Clique em "Submit Order".

The screenshot shows the LAADS DAAC interface at the 'REVIEW & ORDER' step:

- Header:** LAADS DAAC, About LAADS, Data, Learn, Login.
- Section 1 (PRODUCTS):** MYD04_3K (61), 2024-07-08 .. 2024-07-22.
- Section 2 (TIME):** W: -44.9°, N: -1.8°, E: -42.4°, S: -4.2°.
- Section 3 (LOCATION):** 22 files selected.
- Section 4 (FILES):** Apply Post-Processing, View Delivery Method.
- Text:** The order may generate as many as 22 files.
- Buttons:** Add another search, Submit Order.

Passo 9: Após isso, você verá uma mensagem de confirmação. Aguarde o processamento dos dados.



Passo 10: Clique em "Past Orders" para acessar a lista de todos os pedidos que você fez ao portal. O pedido mais recente estará no topo da lista. Clique no link de download correspondente para acessar seus dados.



The screenshot shows the LAADS DAAC interface. On the left is a sidebar with icons for Search by Product, Online Archive, Filename Search, Image Viewer, Load/Save Search, and Past Orders. The Past Orders icon is highlighted with a red arrow pointing up from the bottom. The main content area shows a list of previous orders for the user <luucas.barros@ig.ufpa.br>. The first order listed is OrderId:502262262, which is available and contains 22 files. A red double-headed arrow points to the download link in the order details: /archive/orders/502262262/. Below this, there are several other order entries, each with a '+' sign to expand the details.

OrderId	Order status	Total files
502262262	Jul 22, 2024 (Available)	22 files
502262261	Jul 22, 2024 (Available)	19 files
502009198	Aug 23, 2023 (Expired)	1543 files
502008870	Aug 23, 2023 (Expired)	1939 files
502008869	Aug 23, 2023 (Expired)	1682 files
502008868	Aug 23, 2023 (Expired)	1487 files
502008798	Aug 22, 2023 (Expired)	1653 files
502008797	Aug 22, 2023 (Expired)	1622 files

Passo 11: Você será redirecionado para esta aba. Embora seja possível baixar os dados manualmente, um de cada vez, usando a opção "Download All", essa abordagem não é recomendada devido ao grande volume de dados.

The screenshot shows the Earthdata Archive interface. On the left is a sidebar with icons for Home, Archive, Search by Product, Online Archive, Filename Search, Image Viewer, Load/Save Search, and Past Orders. The main area displays an index for the URL /archive/orders/502262262/. It includes a wget command-line utility download link, a note about using wget with an Earthdata Download Token (EDL), and a table of files with checkboxes for selecting multiple files. The table has columns for Last Modified and Size.

	Last Modified	Size
<input checked="" type="checkbox"/> checksums_502262262	2024-07-22 20:46	12.06
<input checked="" type="checkbox"/> MYD04_3K.A2024190.1620.061.2024191151225.hdf	2024-07-22 20:45	16.90
<input checked="" type="checkbox"/> MYD04_3K.A2024190.1625.061.2024191151246.hdf	2024-07-22 20:45	10.78

Passo 12: Clique em "See wget Download Command" para obter uma linha de comando. Copie essa linha e cole-a no seu terminal. Antes de executar o comando, certifique-se de ter criado uma pasta específica para armazenar os dados. No terminal, inclua o caminho completo até essa pasta. Por exemplo: se você criou a pasta "tutorial" dentro do "Desktop", o caminho será algo como /home/usuario/Desktop/tutorial.

