



NASA/IPAC INFRARED SCIENCE ARCHIVE

Euclid Archive at IRSA

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Q1 Webinar





Euclid prominent on IRSA front page

irsa.ipac.caltech.edu

The screenshot shows the IRSA front page with the following elements:

- Header:** IRSA NASA/IPAC INFRARED SCIENCE ARCHIVE. Navigation links: ABOUT | HOLDINGS | DATA ACCESS | HELP. Login button.
- Search Section:**
 - Search for Source:** Input field for Name or Coordinates, Search button, Radius (30 arcsec), and a link to the Guide for Solar System Observers.
 - Search Catalog:** Dropdown menu set to WISE, Search button.
- Tools and Data Access:** Icons for Catalogs, IRSA Viewer, Finder Chart, and VO/API.
- Mission Icons:** A row of icons for Spitzer, WISE, Euclid (circled in red), SOFIA, IRTF, 2MASS, and Planck, followed by a MORE button.
- Featured Content:** Euclid Quick Release 1 section with a grid of galaxy images and text: "Euclid Quick Release 1 (Q1) is now available at IRSA! This data set consists of approximately 30 TB of imaging, spectroscopy, and catalogs covering four non-contiguous fields: Euclid Deep Field North, Euclid Deep Field Fornax, Euclid Deep Field South, and LDN1641." Below this are links for Past News and Featured Images.
- Footer:** Buttons for Contribute Data, Documentation, Video Tutorials, and Help Desk.

Euclid mission page

irsa.ipac.caltech.edu/Missions/euclid.html





[Euclid Data Explorer](#)
[Catalog Search](#)
[Euclid Q1](#)

Mission Characteristics

Lifetime:	2023 - (ongoing)
Wavelength:	0.55-2.0 microns
Planned Area Coverage:	- Wide Survey: about 14,000 sq. deg. - Deep Survey: about 50 sq. deg.
Instruments:	- VIS imaging, covering 550-900 nm - Near Infrared Spectrometer and Photometer (NISF) imaging in Y, J, and H bands; plus grism spectroscopy from 900-1900 nm - Ground-based data
Funding Agency:	Euclid is an ESA mission with participation from NASA
Dates of Major Releases:	November 2023: First Science Images Released May 2024: Early Release Observations March 2025: Euclid Quick Release 1

IRSA Services - Euclid Releases

Euclid Quick Release 1 (Q1)	Access Q1 data.
Euclid Early Release Observations (ERO)	Access ERO data.

Other Resources

Euclid NASA Science Center at IPAC (ENSCI) website	ENSCI Home Page
ESA Euclid website	Euclid Home Page
Euclid Consortium	Euclid Consortium








Annotated table from https://irsa.ipac.caltech.edu/data/Euclid/docs/overview_q1.html

Data Access Mechanism	Images	Catalogs	Spectra
Euclid Data Explorer Demo by Luisa Rebull	MER mosaics via direct search, associated NIR and VIS calibrated frames upon download.	- Level 2 MER catalog - Level 2 MER Morphology catalog - Level 2 PHZ Photo-z Catalog - Level 2 SPE Redshift Catalog - Quality, Galaxy Candidates, Star Candidates, QSO Candidates - Level 2 SPE Lines Catalog - Spectral Lines, Atomic Indices, Molecular Indices, Continuum Features Additional Catalogs coming soon!	Coming soon!
Catalog Search Tool	N/A	Same as Euclid Data Explorer	N/A
IRSA Astroquery Module Demo by Tiffany Meshkat	MER mosaics	Same as Euclid Data Explorer	Coming soon!
Virtual Observatory Protocols	MER mosaics via SIA	Same as Euclid Data Explorer, via TAP and SCS	Coming soon via SSA!
Browsable Directories Demo by Jaladh Singhal & Troy Raen	- All Q1 data products, on premises and in the cloud. - Catalogs also provided in HATS format (soon) - Bulk downloads		

Bulk Downloads:

Download from the Cloud

- Entire Q1 release is ~35 TB!
- It will take time to download all of this, depending on internet speed, load on system, even file size! Plan accordingly.
- Bulk downloads for Q1 should be from the cloud, to avoid interfering with interactive visualization available in Euclid Data Explorer
- This recommendation will change for DR1

Bulk Downloads:

Understand the Directory Structure

- The data that you can bulk download is in the cloud here:
https://irsa.ipac.caltech.edu/cloud_access/
- If you want to see a listing of the individual data products in the listed directories, you can more easily browse the on-prem copy here:
<https://irsa.ipac.caltech.edu/ibe/data/euclid/q1/>



Bulk Downloads:

Download Selectively!

- Save yourself some trouble and only download all 35 TB if you really need it. Most people won't.
 - MER - 19.4 TB
 - MER_SEG - 970 GB
 - NIR - 2.35 TB
 - RAW - 1.47 TB
 - SIR - 848 GB
 - VIZ - 9.27 TB
 - VMPZ - 5 GB
 - catalogs – 573 GB



Bulk Downloads:

S3 buckets with Euclid Q1 data

- The minimum information you need to download data from the cloud are:
 - Bucket name
 - Prefix
- For Euclid Q1, bucket name = nasa-irsa-euclid-q1
- Each subdirectory has a different prefixes
 - q1/MER
 - q1/MER_SEG
 - q1/NIR
 - q1/VIS
 - q1/SIR
 - q1/VMPZ
 - q1/RAW
 - q1/catalogs
- Each of these subdirectories is documented in the Euclid Archive at IRSA User Guide:
https://irsa.ipac.caltech.edu/data/Euclid/docs/euclid_archive_at_irsa_user_guide.pdf



Bulk Downloads:

Amazon Web Services Command Line Interface (AWS CLI)

- **Install AWS CLI**
 - <https://docs.aws.amazon.com/cli/latest/userguide/getting-started-install.html>
- **Example 1: List the files in a directory**
 - `aws s3 ls --no-sign-request s3://nasa-irsa-Euclid-q1/q1/VMPZ/`
 - `aws s3 ls --no-sign-request s3://nasa-irsa-euclid-q1/q1/VMPZ/VMPZ_HEALPIX_BIT_MASK/102018211/`
- **Example 2: Synchronize the contents of a bucket with a directory on your own machine, but just as a dry run, to see what would happen**
 - `aws s3 sync --no-sign-request --dryrun s3://nasa-irsa-euclid-q1/q1/VMPZ/VMPZ_HEALPIX_BIT_MASK/102018211/ .`
- **Example 3: synchronize the contents of a bucket with a directory on your own machine, this time for real**
 - `aws s3 sync --no-sign-request s3://nasa-irsa-euclid-q1/q1/VMPZ/VMPZ_HEALPIX_BIT_MASK/102018211/ .`
- **Example 4: Copy a single file from a bucket to your own machine**
 - `aws s3 cp --no-sign-request s3://nasa-irsa-euclid-q1/q1/VMPZ/VMPZ_HEALPIX_BIT_MASK/102018211/EUC_LE3_VMPZ-ID_HPBITMASK-102018211_20241120T173733.858490Z_0.11.fits .`
- **Example 5: Alter download script from Euclid Data Explorer to pull data from cloud instead of from on-prem at IPAC**
 - `curl "https://irsa.ipac.caltech.edu/ibe/data/euclid/q1/MER/102158892/VIS/EUC_MER_BGSUB-MOSAIC-VIS_TILE102158892-7364AD_20241025T030333.660540Z_00.00.fits" -o EUC_MER_BGSUB-MOSAIC-VIS_TILE102158892-7364AD_20241025T030333.660540Z_00.00.fits`
 - `aws s3 cp --no-sign-request --dryrun s3://nasa-irsa-euclid-q1/q1/MER/102158892/VIS/EUC_MER_BGSUB-MOSAIC-VIS_TILE102158892-7364AD_20241025T030333.660540Z_00.00.fits .`
- **Example 6: Synchronize a subset of files in a cloud directory with directory on your own machine using wildcards**
 - `aws s3 sync --no-sign-request --dryrun s3://nasa-irsa-euclid-q1/q1/MER/102158892/VIS/ . --exclude "*" --include "*MER_BGSUB-MOSAIC*.fits"`