

COM organization at the Consortium Level

- Formation of a working group within the EC-EPO: call for volunteers during the Oslo meeting
- So far, 3 meetings called, convened by **Audrey Le Ruin** (*chargée de communication* Euclid-France)
- Creation of common pages
 - Redmine: <https://euclid.roe.ac.uk/projects/ecepo/>
 - Also a slack channel
- The activities of the group have been slowly ramping up: hopefully to be boosted asap!
 - Next meeting January 25th

COM at the national level

- A working group (**EIT-COM**) was formed in the fall: very active from the beginning
- Call to web agencies for the creation of a **Euclid-ITALIA website**
 - Detailed specifications agreed upon by the beginning of January and circulated to the agencies
 - We expect to have a preliminary version of the site by the end of March
- Also, creation of **social media profiles**
- The website and social media will expose a collection of **initiatives and events** in various cities throughout the country
 - very important to advertize Euclid during the year of the launch in as many events as possible!
- A repository of **common material** and a list of **experts** available to provide **outreach seminars** in various regions will be prepared too.
- We were granted permission to create our own **logo for Euclid-ITALIA**

Organization of the EIT-COM

- Website group: coordinated by Anna Maria Di Giorgio (INAF-IAPS)
- Social media pages: coordinated by Paola Maria Battaglia (INAF-OAS)
- Creation of video clips and video interviews: coordinated by Sandro Bardelli (INAF-OAS)
- Press office coordination by Media Inaf
- Important to maintain **coordination at the Consortium level:**
 - some members of the EIT-COM group are also members of the EC EPO group and will act as contacts

Volunteers who would like to contribute, please contact:

Anna Maria Di Giorgio anna.digiorgio@inaf.it

Sandro Bardelli sandro.bardelli@inaf.it

Silvano Tosi silvano.tosi@ge.infn.it



Website euclid-italia.org

- OBJECTIVES
- TARGET
- REQUIREMENTS AND CHARACTERISTICS
- INFO ARCHITECTURE
- ANALYTICS
- ROADMAP
- WEB AGENCY

Goals

- **Showcase** the Euclid mission to the general public
- Underline and bring out the **role** of the Italian team
- Provide **“user-friendly” pieces of information**, updates, data

The website is the landmark of a wider communications strategy that involves different media and touchpoints

Astronomy enthusiasts

A person is silhouetted against the Milky Way galaxy in a starry night sky. The galaxy is visible as a dense band of stars, stretching across the sky from the bottom left towards the top right. The colors of the galaxy range from yellow and orange at the bottom to purple and blue at the top. The person is standing on a dark, rocky outcrop in the foreground, looking up at the stars. The background is a vast, dark sky filled with numerous individual stars.

Foto by [Greg Rakozy](#) on [Unsplash](#)

Astronomy enthusiasts

They are already somewhat **familiar with science topics**.

They watch Quark and Focus on TV, are superfans of Discovery Channel, and follow some **astrophysics groups on FB**.

They might listen to themed podcasts as well.

If there's a live broadcast of the launch, many of them will watch it.

Perhaps there is a male preponderance, but we intend to promote access to scientific topics as much as possible for women as well.

Astronomy enthusiasts - insights

PERSONAL **EMPOWERMENT**

(access to knowledge)

PRIDE / SENSE OF BELONGING

(Italy plays an important role in this project)

SOCIALITY

(show off, they like to use scientific jargon)





Secondary targets

INSTITUTIONS

Definitely a stakeholder with high interest in the project, able to appreciate its visibility.

PRIVATE PARTNERS

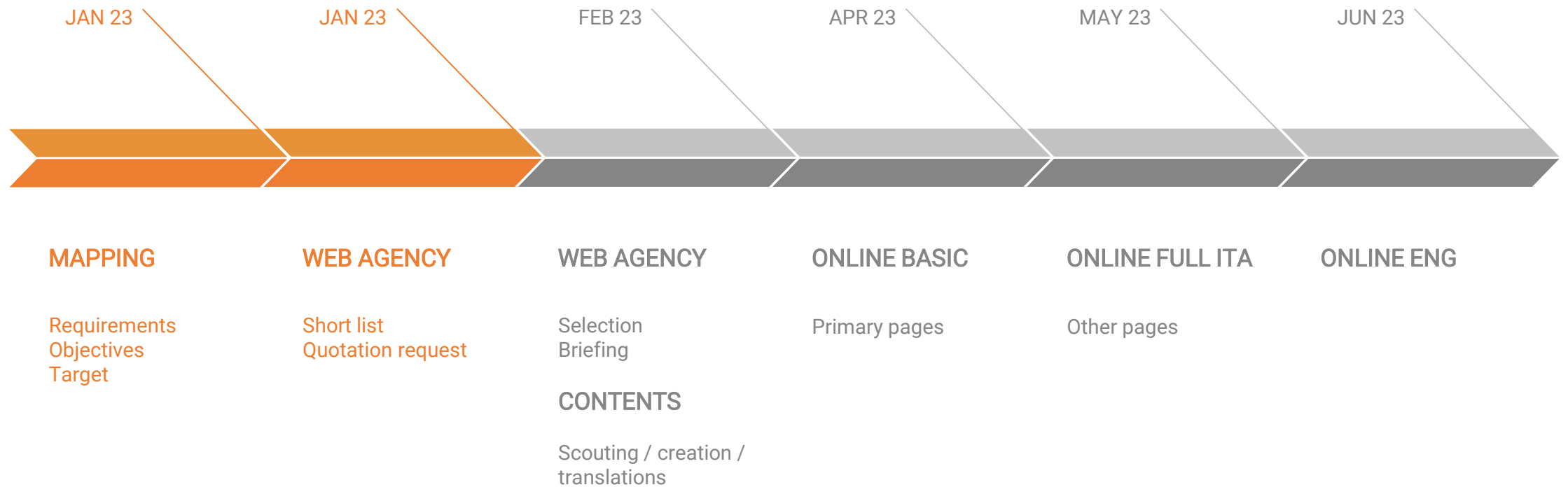
We want to give visibility to the Italian companies participating in the project.



euclid-italia.org

- ITALIAN / ENGLISH
- KNOWLEDGE TRANSFER
Two levels of reading: one that allows a quick glance (for those who are curious, but not particularly interested), and another for those who want to learn more
- MULTIMEDIA (Infographics / Images / Videos)
- PRESS
- EVENTS (calendar + archive)
- STUDENTS / EC-ITA MEMBERS (links to external pages)

Roadmap



Social media

- Content planning
- Image and layout coordination
- Availability of Paola Maria Battaglia (INAF-OAS) to coordinate the effort
- A call for volunteers, in particular among the younger members, will follow



Events: a successful example, the Escape Room by INFN-Padova

- First presentation at European Researchers' Night in Padova, 30 September /1 October 2022 4 -11 pm
- Presented at the Euclid EPO meeting by Chiara: big consensus also from the other institutes!
- To be proposed again at the ERN 2023 and at the Festival della Scienza in Genova (26/10-05/11/2023)
 - The call closes on February 18th ; the proposal is in preparation
 - Proposals for other Euclid events at Festival della Scienza are being discussed



TASI courtesy
(one week display @DFA and then moved to the escape site)

Courtesy of Chiara Sirignano

- Main targets: students 7 to 14 years old
- Main messages: dark content of the universe, expansion of the universe
- In 2022, a mock up by TASI was used: it would be good to have our own mock up, possibly including the mock-up of some internal components of the Payload Module
 - We are investigating the feasibility and costs

A common repository of materials

to find tools to use for interviews, lectures, public events



**WHAT IS TO BE FOUND
INSIDE?**

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to find tools to use for interviews, lectures, public events

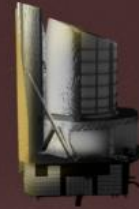


Euclid
3D model: [blend fbx max obj tex](#)
3D print model: coming soon!
3D paper model: n/a
Mission icon: [png](#)

==3D files from ESA

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Euclid

3D model: [blend](#) [fbx](#) [max](#) [obj](#) [tex](#)

3D print model: coming soon!

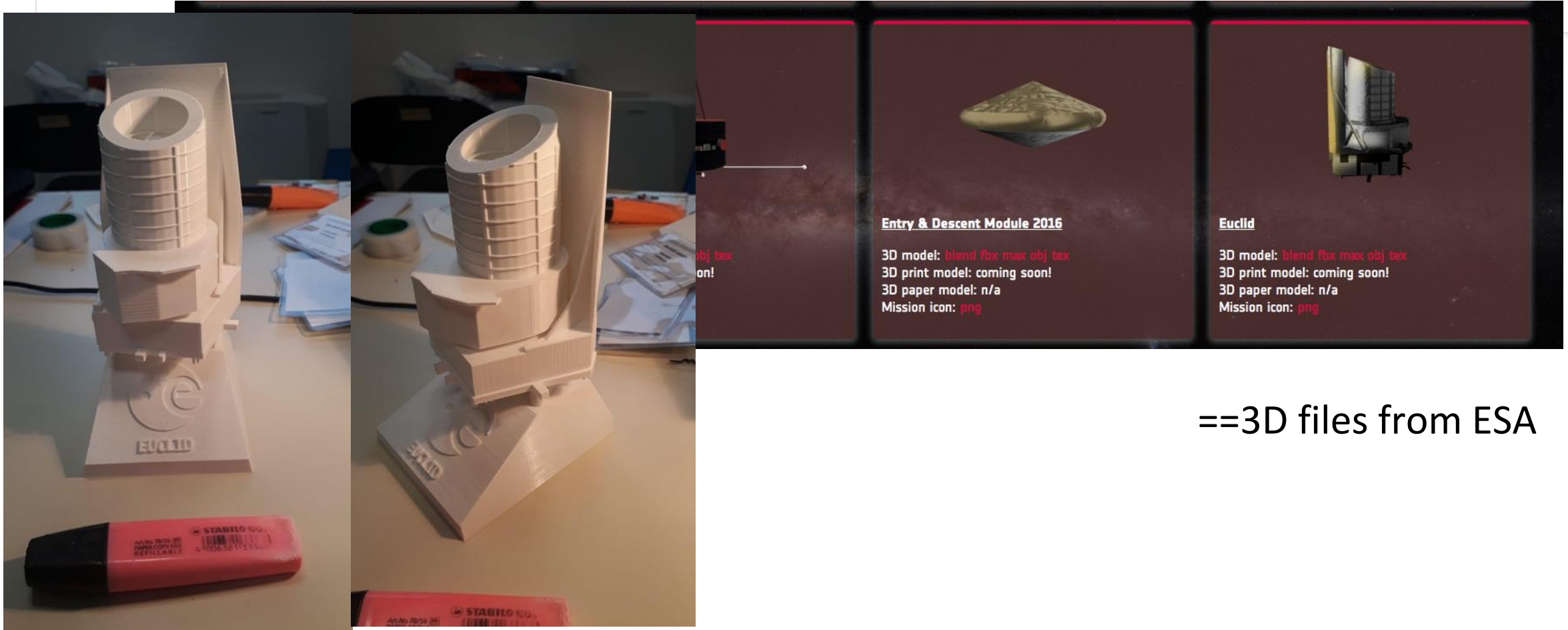
3D paper model: n/a

Mission icon: [png](#)

==3D files from ESA

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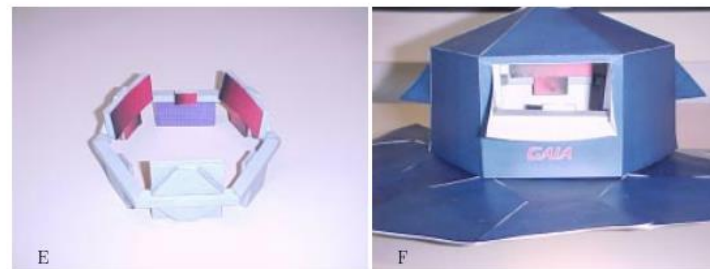
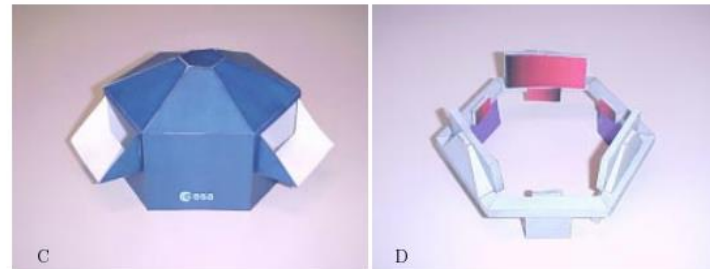
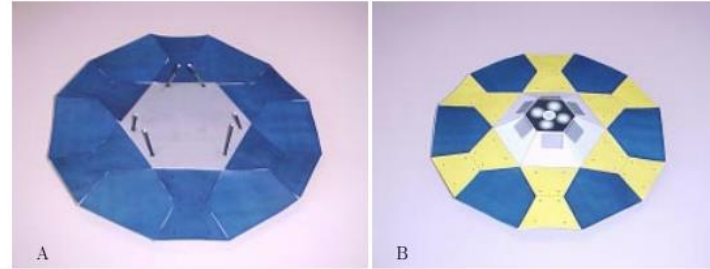
==3D files from ESA

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as tools to use for interviews, lectures, public events



==3D files
From ESA



Ask to ESA for Papercraft?
to be used in events?

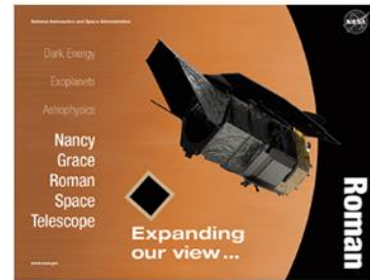
Figures A–F: GAIA satellite model assembly

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Brochures and Fact Sheets



Roman Space Telescope Brochure
PDF 2 MB | PDF 31 MB
Credit: STScI



"Beauty Pass" Lithograph
PDF 2.7 MB
Credit: NASA



"Dark Energy" Lithograph
PDF 1 MB
Credit: NASA



Cosmology with Roman Fact Sheet
PDF 1.4 MB
Credit: STScI



Roman Capabilities Galaxies Fact Sheet
PDF 1.3 MB
Credit: STScI



Roman Capabilities Stars Fact Sheet
PDF 1.3 MB
Credit: STScI



Mission Operations and User Tools Fact Sheet
PDF 100 KB
Credit: STScI

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ROMAN Galaxies by the Millions

NASA's Nancy Grace Roman Space Telescope will have the power to collect an unprecedented volume of high-resolution near-infrared imaging and spectroscopic observations of galaxies across vast fields of view and spans of time, providing the large data sets needed to understand how different types of galaxies form, grow, interact with their environments, and evolve over time.

Hubble-Like Resolution $\sim 0.1''$ Near-Infrared Imaging and Spectroscopy 0.48–2.3 μm Expansive Field of View 0.261 deg² All Data Nonproprietary $\sim 4 \text{ Pb/yr}$

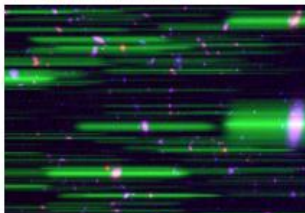
Complementing Other Observatories HST, JWST, Rubin, Gaia, Euclid, TESS, and more Propelling Future Discoveries All of Astrophysics

Galaxy Formation and Evolution



Galaxies at different stages of formation at $z = 5.79$ (top left) to $z = 0.49$ (bottom right) from the Hubble Ultra Deep Field 2004. (NASA, ESA, and the HUDF Team)

Galaxy Properties



Overlay of a simulated Roman grism image (green) of sources $< 25 \text{ AB mag}$ on a section of a two-color CANDELS GOODS-S field image taken with the HST in F160W (red) and F606W (blue). (Swarra Ravindranath, STScI)

Galaxies, Black Holes, and AGN



Multi-wavelength image of active radio galaxy Centaurus A. (X-ray: NASA/CXC/SAO; optical: Rolf Olsen; infrared: NASA/AUP; Caltech; radio: NRAO/AUI/NSF/Univ. Hertfordshire/M. Hardcastle)

Roman will enable observations of hundreds of millions of galaxies at numerous stages of development, providing imaging and spectroscopy required to build a clear and detailed picture of how different types of galaxies form and evolve. Roman will provide:

- Large data sets with homogeneous observing conditions needed to identify statistically significant correlations between various galaxy properties as a function of mass, environment, and redshift
- Potential Extragalactic Wide Area Survey (High-Latitude Survey) covering $\sim 2,000 \text{ deg}^2$ with NIR imaging and spectroscopy over the same fields of view
 - ◊ Imaging depth (5 σ) of 26.9, 26.95, 26.9, and 26.25 in Y, J, H, and F184 filters
 - ◊ Grism (1.00–1.93 μm) spectroscopy depth of $1.0 \times 10^{-16} \text{ ergs/cm}^2$ at 1.90 μm (5 σ)
 - ◊ Estimated detection rate of 27 million galaxies per month, with a total of more than one billion galaxies over the full survey
 - ◊ Survey definition to be identified through a community-driven open process
- Immediate open access to all mission data via the Mikulski Archives for Space Telescopes (MAST), and funding opportunities for new observations and archival research programs

With its 0.11'' resolution, two slitless spectroscopy modes covering 0.75–1.93 μm , and survey speeds 100–1000 \times Hubble, Roman will provide the large datasets needed for unprecedented statistical analysis of galaxy populations and evolutionary relationships across multi-dimensional parameter space. Roman will enable:

- Extragalactic surveys for measurements of redshift, luminosity, color, size, shape, clumpiness, and clustering from 10^3 – 10^8 galaxies over the mission lifetime
- Grism observations to provide robust spectroscopic redshifts for > 100 million galaxies, and to create spatially resolved maps of $\text{H}\alpha$ surface brightness, dust extinction, mass-to-light ratio, and metallicity at $\sim 1 \text{ kpc}$ resolution
- Detection of ~ 14 million $\text{H}\alpha$ galaxies at $1 < z < 1.9$, and 1.5–2.0 million [OIII] galaxies at $z = 1.8$ –2.8 (up to $z = 4.2$ with SFR $> 200 M_{\odot}/\text{yr}$)
- Modeling of spectral energy distributions, including spectral lines from grism spectra, to measure SFR, stellar mass, dust extinction, mass-to-light ratio, and metallicity
- Detection of 10^4 galaxy-galaxy strong lenses ($\sim 10/\text{deg}^2$) for mass density profile models of luminous and dark matter in foreground galaxies of $z = 1$ –2 and $M^* = 10^9$ – $10^{10} M_{\odot}$

Roman will facilitate a more complete census of black holes, quasars, and AGN, and a more comprehensive understanding of the coevolution of supermassive black holes and their host galaxies. Roman will enable:

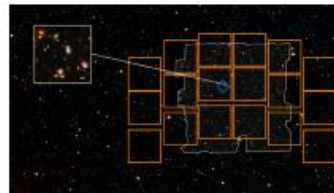
- Surveys with the potential to reveal the mass of accreting black holes at peak growth of $z = 2$ –7, as well as the clustering and properties of their host galaxies
- Studies of the effects of black hole accretion on the growth of galaxies via feedback mechanisms at $1 < z < 7$
- Investigations of the AGN/star-formation relationship in the most massive galaxies
- Characterization of differences in clustering amplitude of obscured and unobscured AGN to probe AGN unification scenarios and possible correlations with galaxy evolution
- Discovery of ~ 2600 quasars at $z > 7$ to track the assembly of 10^7 – M_{\odot} black holes during the Epoch of Reionization
- Characterization of the faint end of the quasar luminosity function at $z > 3$ –4
- Detection of strongly lensed quasars to map mass distribution of lensing systems, as well as properties of their host galaxies

Galaxies and their Environments



Optical/infrared Hubble image of galaxy cluster Abell 51063, showing intracluster light and lensed background galaxies. (NASA, ESA, M. Montes, and the HFF team)

High Redshift Galaxies



Footprint of an example Roman Ultra Deep Field (orange) compared to the Hubble Ultra Deep Field (blue), and wider, shallower Hubble observations (white) (NASA, ESA, DSS, and Anton M. Koekemoer, STScI)

Synergies



Wavelength range of select space and ground-based observatories to complement Roman in the 2020s (A. James, P. Jeffries, STScI)

Roman's ability to capture vast swaths of the sky will provide insights into the relationships between galaxies and their environments over a wide range of scales, building a better understanding of how a galaxy's environment affects its properties, growth, and evolution. Roman will make it possible to:

- Test models of galaxy evolution by measuring clustering as a function of galaxy properties
- Survey galaxies at $z = 1$ –2 and combine grism redshift data with weak-lensing imaging data to create the densest map of structure on linear scales of 11–12 Mpc
- Investigate links between galaxies, AGN and supernova feedback mechanisms, and dark matter halos at $z > 1$ as a function of galaxy mass
- Detect dwarf galaxies in large enough numbers to provide constraints on dark matter models and compare to cosmological simulations
- Map substructure in galaxies' stellar halos to track past accretion history
- Survey galaxy groups and clusters to identify environmental influences on galaxy properties
- Use strong and weak gravitational lensing to map dark matter on spatial scales of 10–50 kpc within galaxy clusters to compare to simulated dark matter profiles from cosmological models and better understand interactions between mass components in merging/colliding clusters

Roman's unique combination of near-infrared sensitivity, high resolution, and extreme survey speed will dramatically increase our sample of galaxies and quasars in the early universe, providing the data needed to revolutionize our understanding of early star formation, the Epoch of Reionization, and the early structure of the universe. Roman will enable:

- Potential Extragalactic Wide-Area Survey with estimated detection of 2.8×10^6 galaxies of $\leq 26.5 \text{ mag}$ at $z = 8$; 7.5×10^4 galaxies at $z = 9$; and 1.9×10^4 galaxies at $z = 10$
- Discovery of high- z Ly- α emitting galaxies ($8 < z < 15$), Lyman-break galaxies, AGN, and quasars to determine their luminosity functions and investigate their impact on cosmological reionization
- Detection of Ly- α and $\text{H}\alpha$ emission features to constrain SFR, amount of ionizing radiation, and escape fraction from the neutral intergalactic medium, and to understand their impact on structure formation
- Treasury-scale observation programs with survey speeds 10^2 – $10^3 \times$ Hubble, including potential Roman Ultra Deep Field and Wide Deep Grism programs for probing galaxies in the early universe

Roman's power to capture high-resolution near-infrared observations of hundreds of millions to billions of galaxies and their environments over a wide range of redshifts will complement the capabilities of other observatories, including Rubin, Euclid, eROSITA, Webb, and Hubble.

- Combining data from Roman, Rubin, and Euclid will improve photo- z measurements by mitigating systematic errors arising from incomplete wavelength coverage, low resolution, blending, and biases in galaxy sample selection.
- The combined broad wavelength coverage will enable better SED modeling and more accurate determinations of galaxy properties such as star-formation rate and stellar mass.
- Synergies with radio, optical, and X-ray observatories will advance our understanding of obscured and unobscured AGN and the coevolution of AGN with their host galaxies.
- Cross-correlating Ly- α emitting galaxy positions mapped by Roman and neutral hydrogen mapped by SKA can be used to probe conditions of the Epoch of Reionization.
- Roman's ability to conduct deep surveys of large regions of the sky will increase the statistical probability of finding rare objects, which can then be observed with additional telescopes for higher-resolution spectroscopy and panchromatic imaging.



Learn more about the Roman Space Telescope

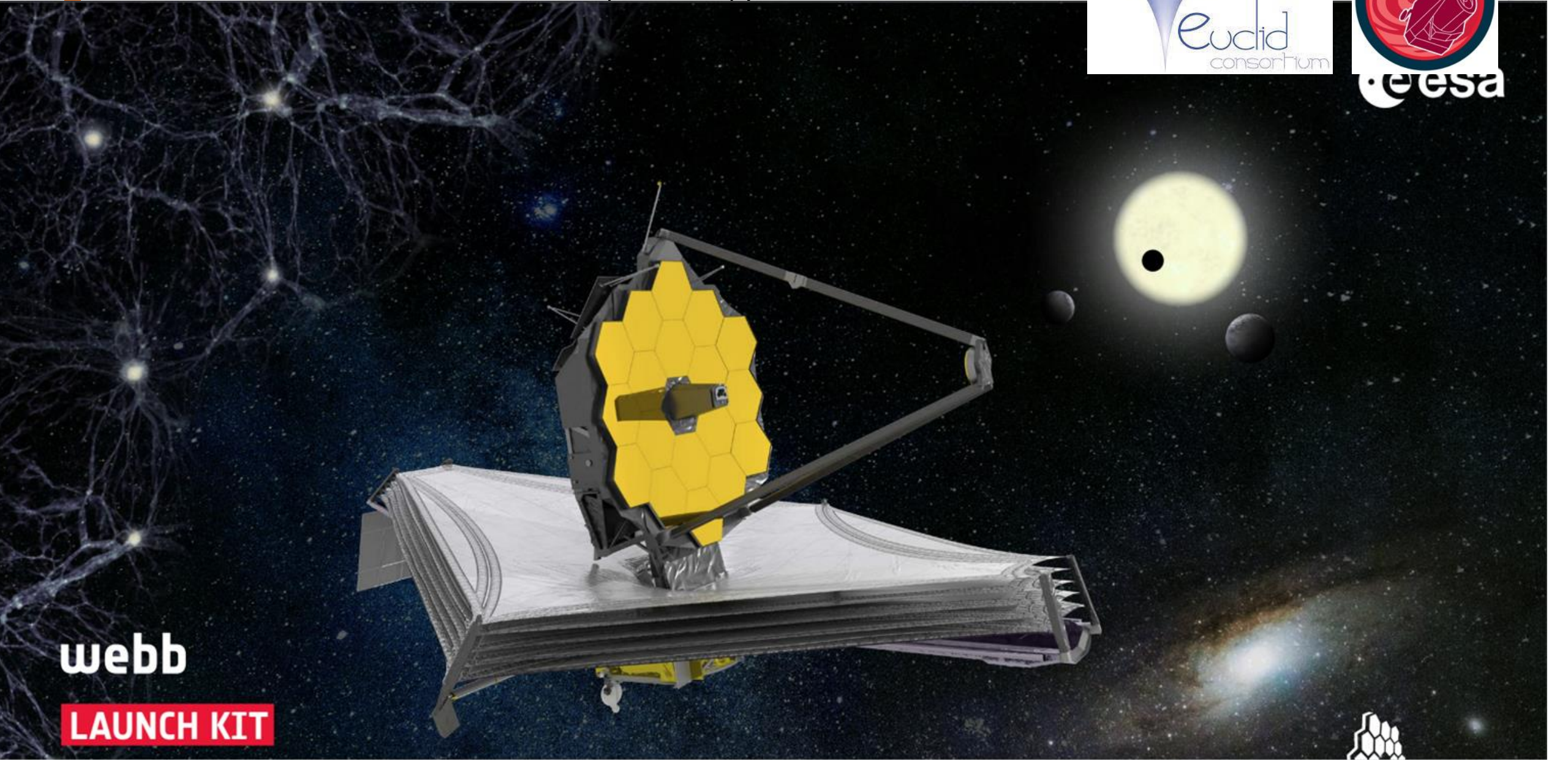
STScI website: www.stsci.edu/roman

Mission/partner websites: www.stsci.edu/roman/about.html#Partners

For more about how Roman will explore the universe, see www.stsci.edu/roman/documentation

A common repository of materials

to find tools to use for interviews, lectures, public events



webb

LAUNCH KIT



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MEDIA INAF



Short interviews and movies (clips)
==Need to be professional==
(ask to MediaInaf, ASI and INFN
also for rough material)

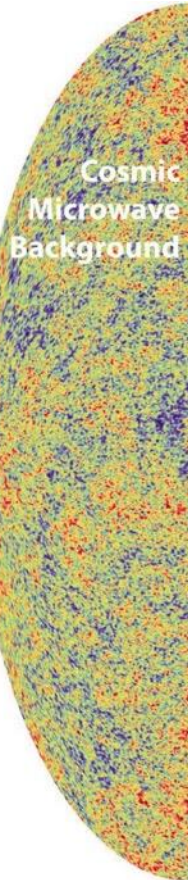
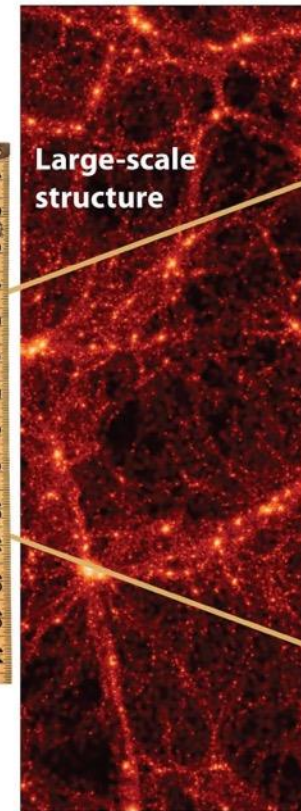
-Need of a editorial board to match
a list of questions to a list of experts
-need an editorial plan

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Pictures and slides



BARYON

Baryon-Acoustic-Oscillations

TEXT, SCREEN PLAY AND DRAWINGS: ANGELO ADAMO, INAF-OABO (IT)
SCIENTIFIC SUPERVISION: SANDRO BARDELLI, INAF-OABO (IT)

"LET ME INTRODUCE MYSELF:

I AM A BIG HEAP OF PRIMORDIAL DARK MATTER. "DARK" BECAUSE I HAVE NOTHING TO DO WITH LIGHT, THEREFORE I AM NOT PRECISELY "BLACK" "DARK" ALSO BECAUSE...

... YOU HAVE NO IDEA WHAT I AM. NO, I HAVE NO INTENTION OF REVEALING IT TO YOU. I DO NOT WANT TO TELL YOU MY BUSINESS. I WILL LIMIT MYSELF TO REPEATING WHAT YOU HAVE ALREADY GRASPED WITHOUT MY HELP

JUST AFTER THE "IN-FAMOUS" BIG BANG, THERE WAS ONLY AN EXTREMELY HOT "SLOP" FORMED BY SOMETHING WHICH YOU POLITELY DUBBED "PLASMA" FORMED BY PHOTONS AND ELECTRONS. FURTHERMORE, THERE WAS ALSO ME AND ALL MY NUMEROUS COLLEAGUES, OTHER DARK MATTER HEAPS...

... DISTRIBUTED OVERALL TO SEASON THAT SOUP

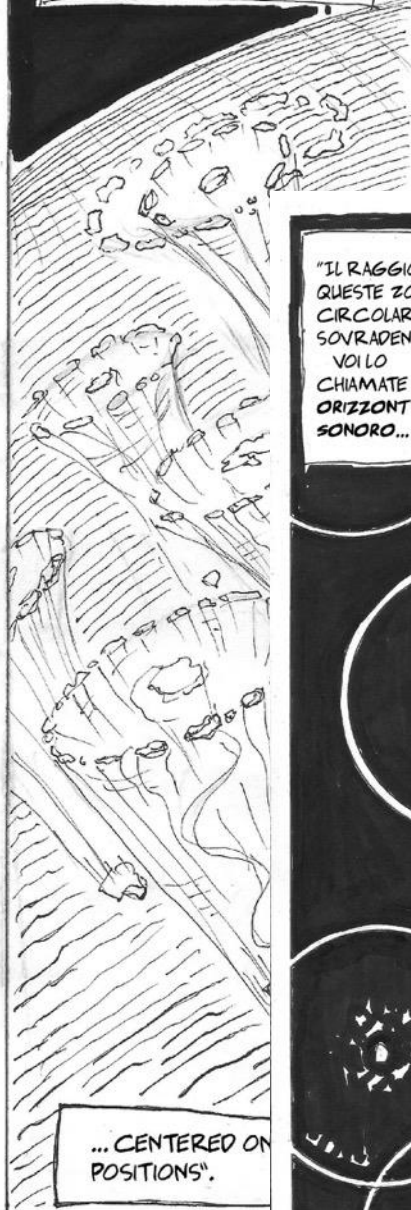
"FOOTPRINTS OF THIS TUG-OF-WAR BETWEEN BARYONIC AND DARK MATTER ARE NOW VISIBLE AS SCARS IN THE SKIN OF THE COSMOS DELIVERED BY THE LIGHT..."



AT THE END WHEN THE LIGHT FLOWED FREE, THE BARYONIC MATTER CAPITULATED...

... TO THE GRAVITATIONAL ATTRACTION OF US, HEAPS OF DARK MATTER

OSCILLATING, THE MATTER CONDENSED ON US AND IN RINGS...

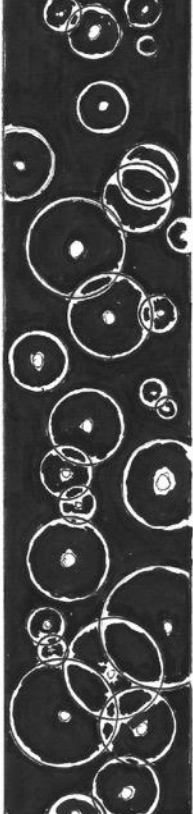
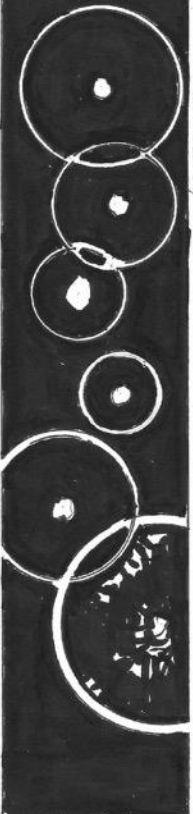


"IL RAGGIO DI QUESTE ZONE CIRCOLARI SOVRADENSE VOI LO CHIAMATE ORIZZONTE SONORO..."

... E DAL MOMENTO CHE NOI BLOCCHI DI MATERIA OSCURA PRIMORDIALE SIAMO IN TANTI, LA PELLE COSMICA...

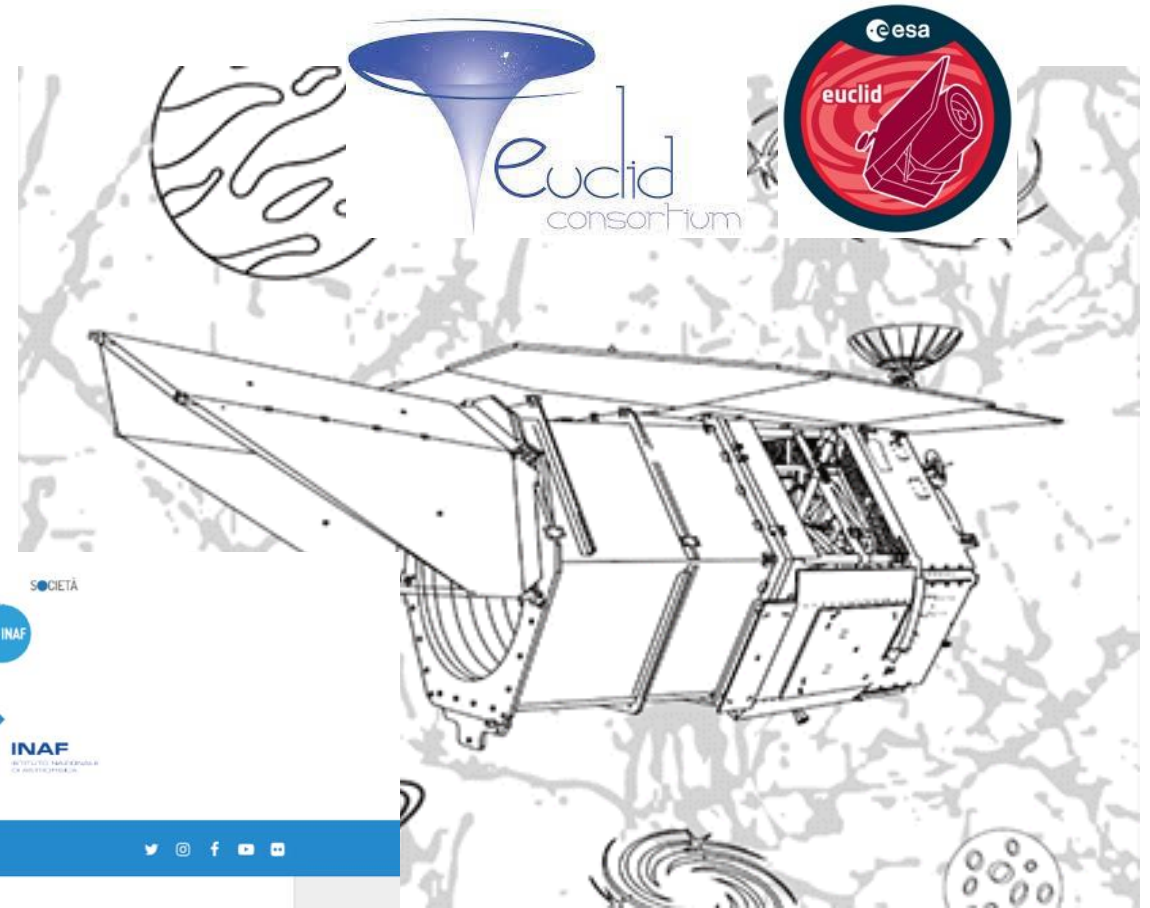
... E' DIVENUTA SIMILE ALLA SUPERFICIE DI UN LAGO SUL QUALE CADONO NUMEROSISSIME GOCCE DI PIOGGIA O SE PREFERITE, ...

ALLA PELLE DI UN IMMANE LEOPARDO COSMICO LE CUI MACCHIE SPESSO SI SOVRAPPRONGONO.



Already produced

EUCLID for Kids and at school



Risorse Didattiche

EDU INAF Il magazine di didattica e divulgazione dell'Istituto Nazionale di Astrofisica

Eventi

Notizie

SOCIETÀ

EDU INAF

SCUOLA

INAF

HOME DIDATTICA ▾ RUBRICHE ▾ APPROFONDIMENTI ▾ IN EVIDENZA ▾ EVENTI ▾ CHI SIAMO ▾ 🔍

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La vignetta del mese

EDU INAF

Costellazioni: Cerbero

EDU INAF

Universe Mondo

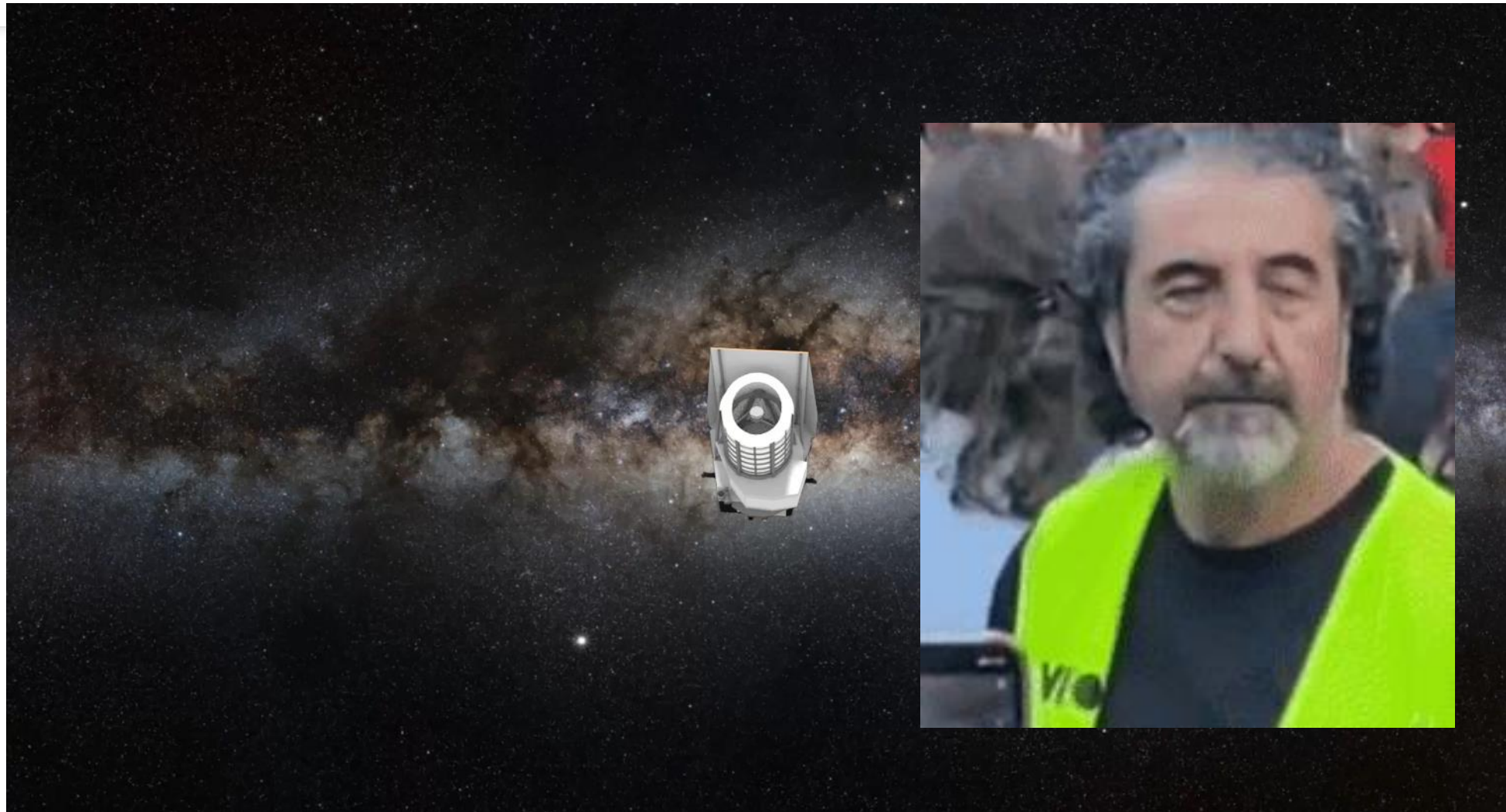
Astrofoto

EDU INAF

Per la scuola

Concorsi

FESTIVALS AND COORDINATED EVENTS



Thank you for the attention.

Let us know your comments and inputs.

Volunteers, please contact us!

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