

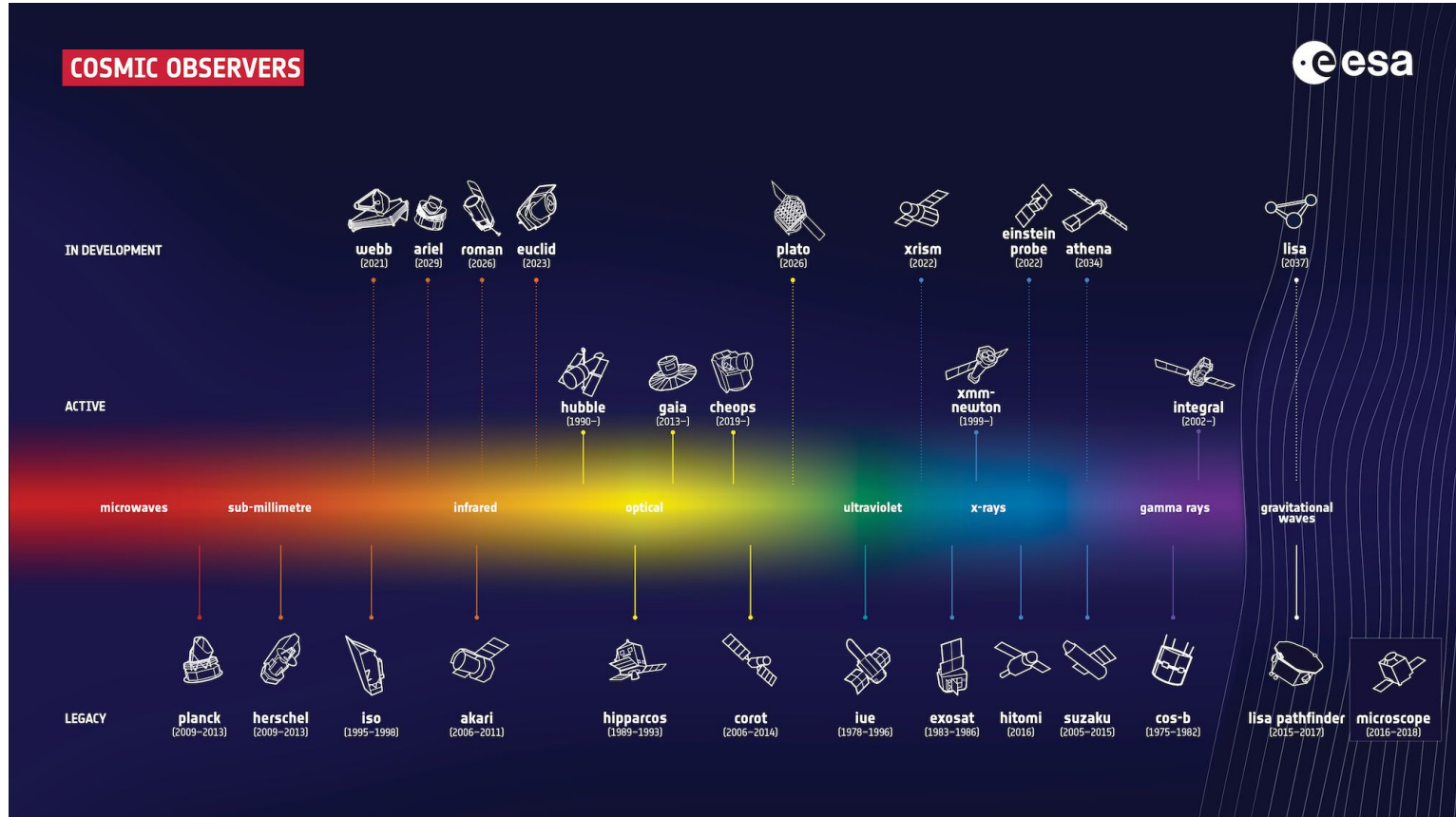
# Les premiers résultats du télescope spatial Euclid

Jean-Charles Cuillandre, astronome au CEA Paris-Saclay

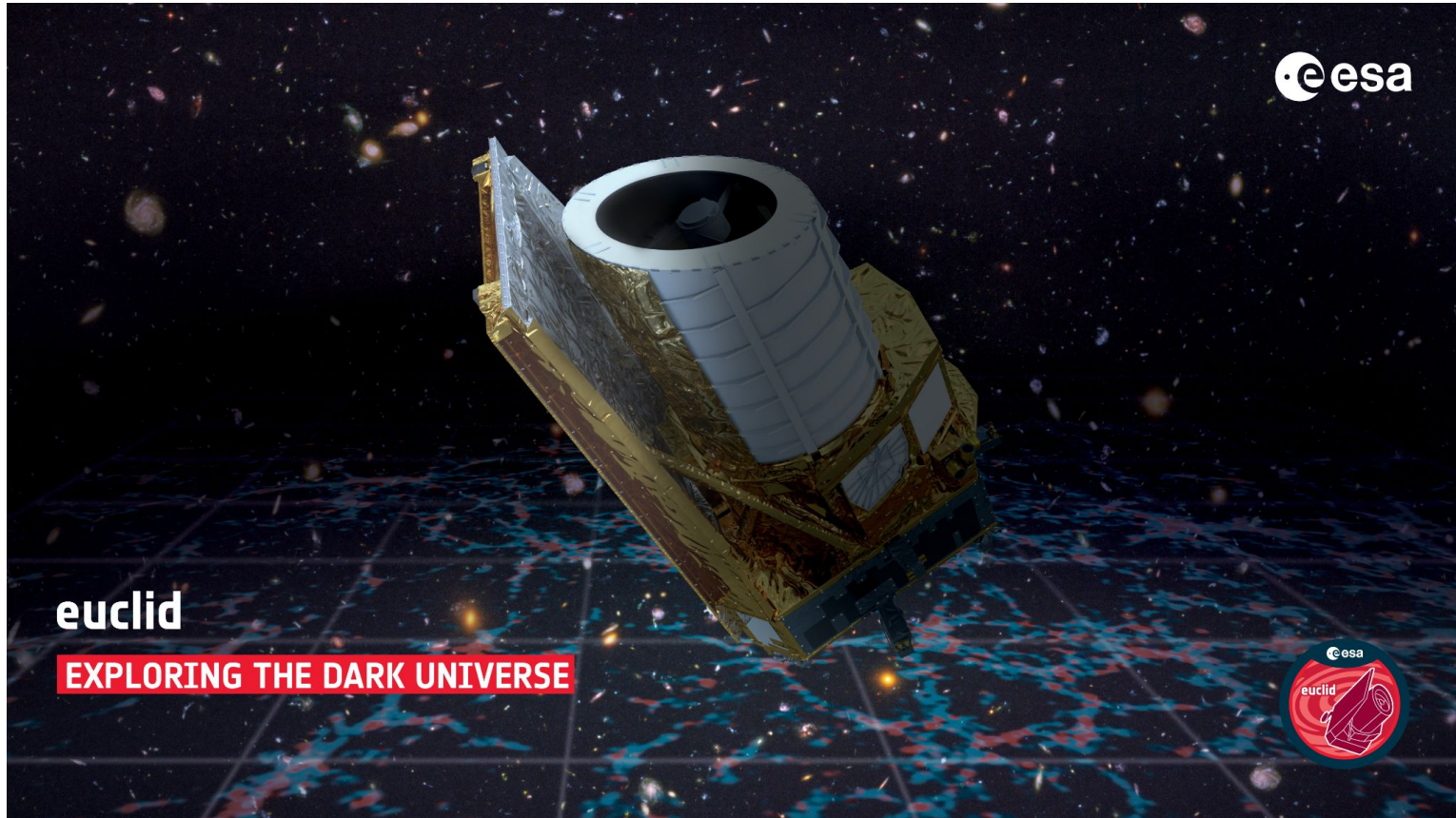
Observatoire des sciences de l'Univers de l'Université Paris-Saclay, membre de la mission Euclid de l'ESA



# Les missions scientifiques de l'Agence spatiale européenne



# Le télescope spatial Euclid et l'Univers sombre

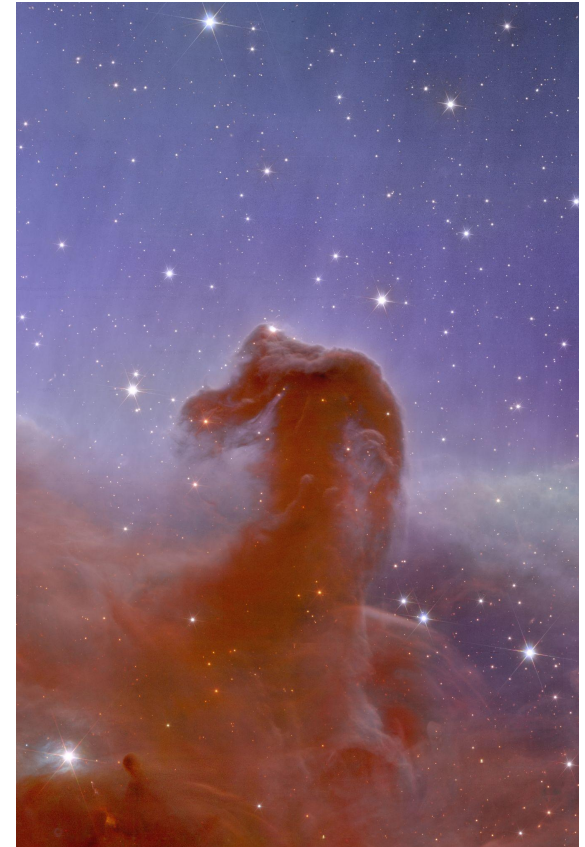


# La collaboration scientifique "Euclid Consortium"

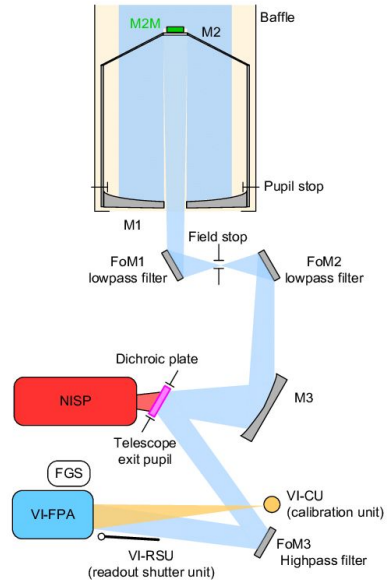
- 17 pays: AT, BE, CA, CH, DE, DK, ES, FI, **FR**, IT, JP, NL, NO, PT, RO, UK, US;
- > 300 laboratoires et institutions;
- > 1600 membres (depuis 2011 : > 2500 membres), majoritairement pour l'astrophysique;
- Contributions : instruments, gestion des données, compléments relevés télescopes au sol, conception du relevé spatial de 6 ans, simulation cosmologiques, exploitation scientifique et publications;
- La France domine les contributions ➡ Mission Lead: Y. Mellier de l'Institut d'Astrophysique de Paris.



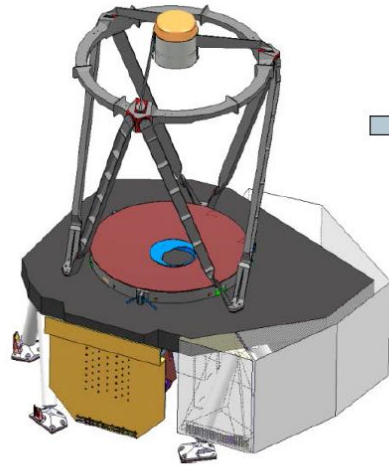
# Construction, lancement, et premières images



# Conçu pour capturer l'univers comme nul autre télescope



PDR April 2014



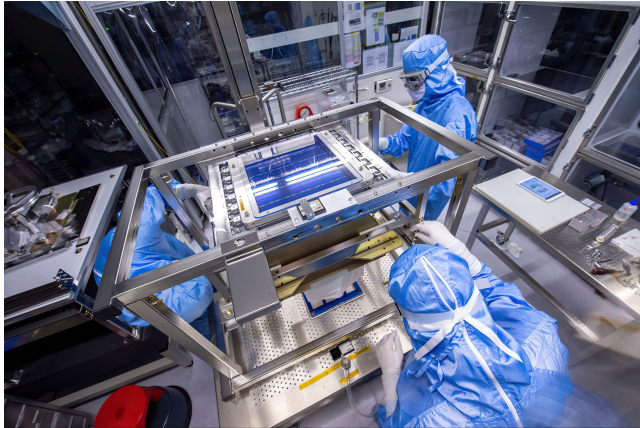
CDR July 2017



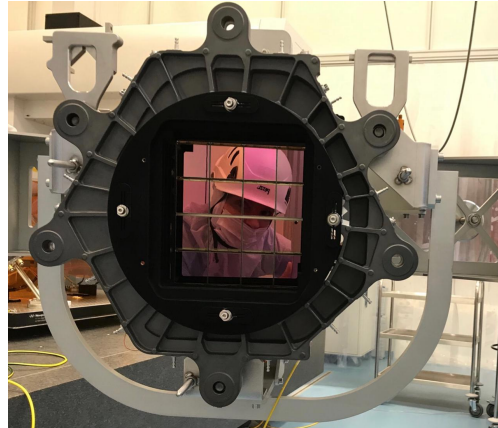
Front cavity

# Un télescope qui voit large

- Deux grandes caméras panoramiques révolutionnaires dans l'espace (VIS & NISP)
- Euclid capture la lumière depuis le domaine optique jusqu'au proche infrarouge
- Les données mènent à la science mais aussi à de belles images du cosmos
- Euclid est également équipé d'un mode spectrographe



VIS (optique, 620 Mpx)



NISP (infrarouge, 64 Mpx)

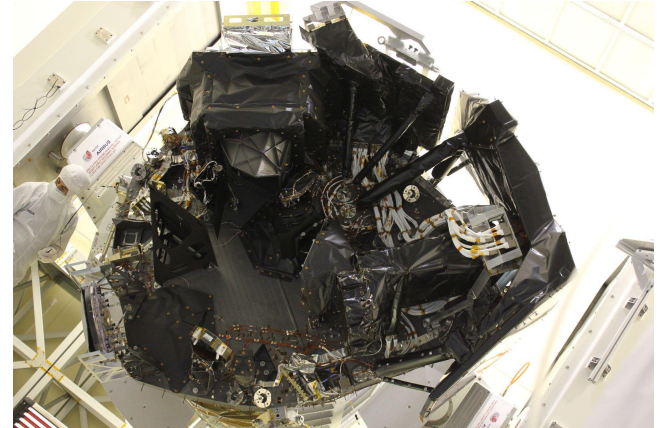
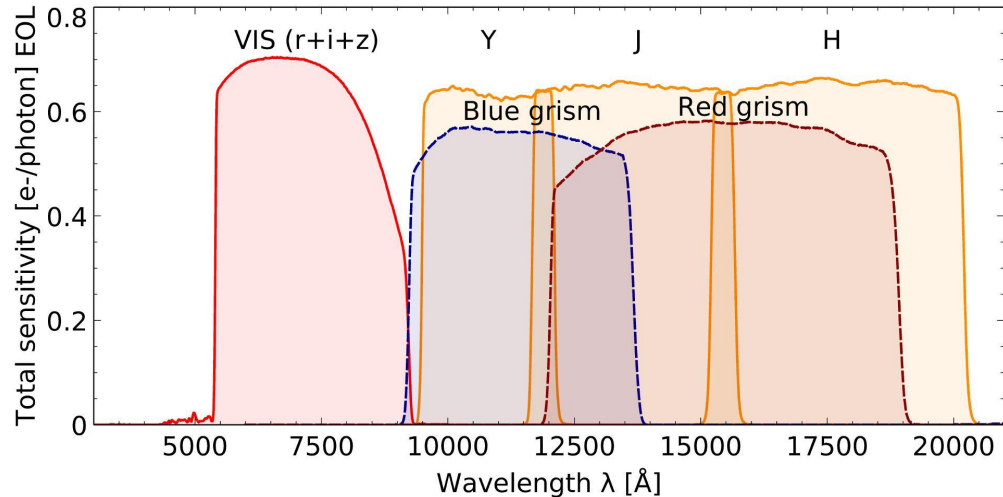
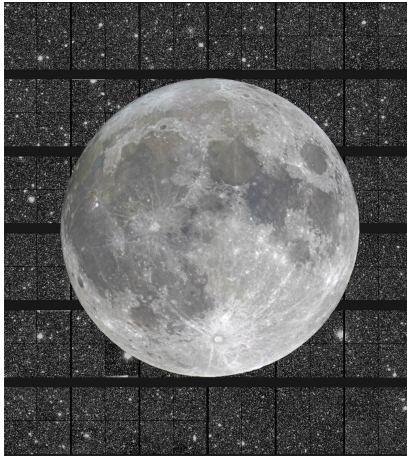


Plate-forme optique et instrumentale

# Le télescope spatial Euclid de l'ESA en quelques chiffres

- Diamètre du miroir primaire : 1.2 mètre
- Champ de vue : 0.5 degré carré (identique sur les deux instruments)
- Résolution optique : 0.14" (610 Mpx mosaïque CCD, 0.1"/px, bande spectrale unique)
- Résolution proche-infrarouge : 0.45" (64 Mpx mosaïque FPA, 0.3"/px, trois bandes)
- Spectrographe basse résolution dans le proche infra-rouge
- Localisé au point de Lagrange 2 pour sa mission de 6 ans (durée de vie > 12 ans)

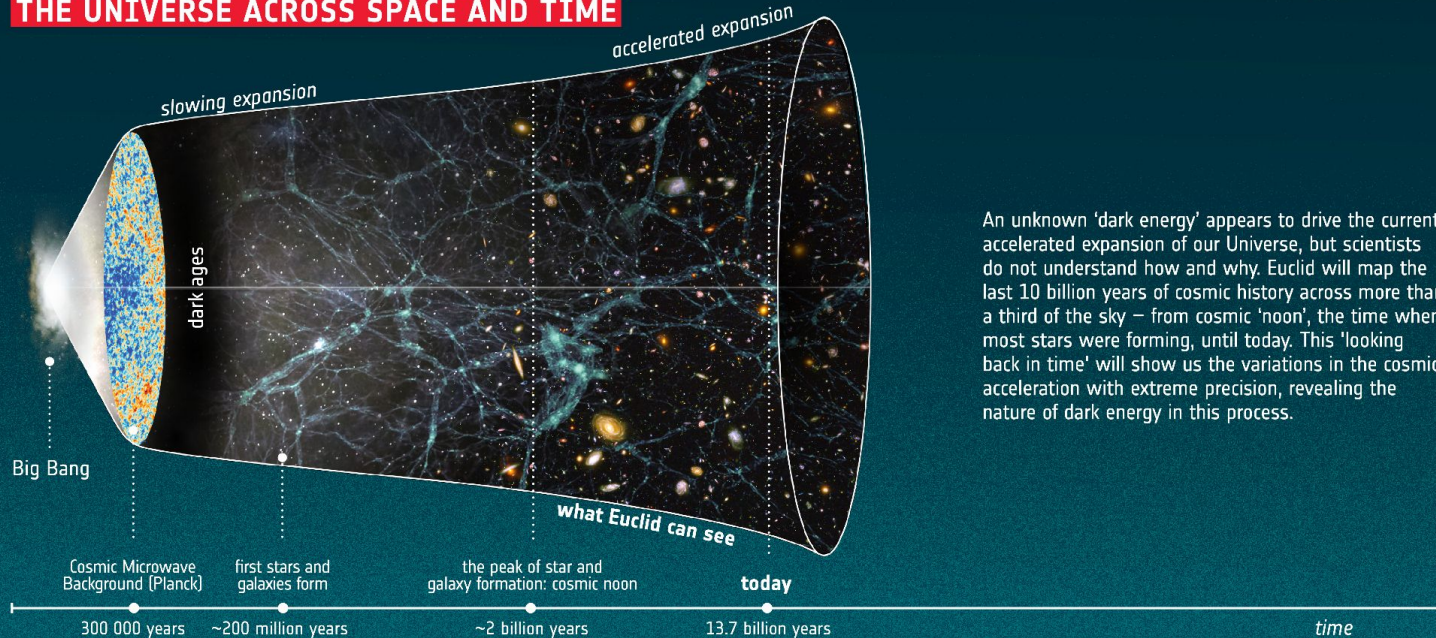




# Une mission optimisée pour traquer l'énergie sombre

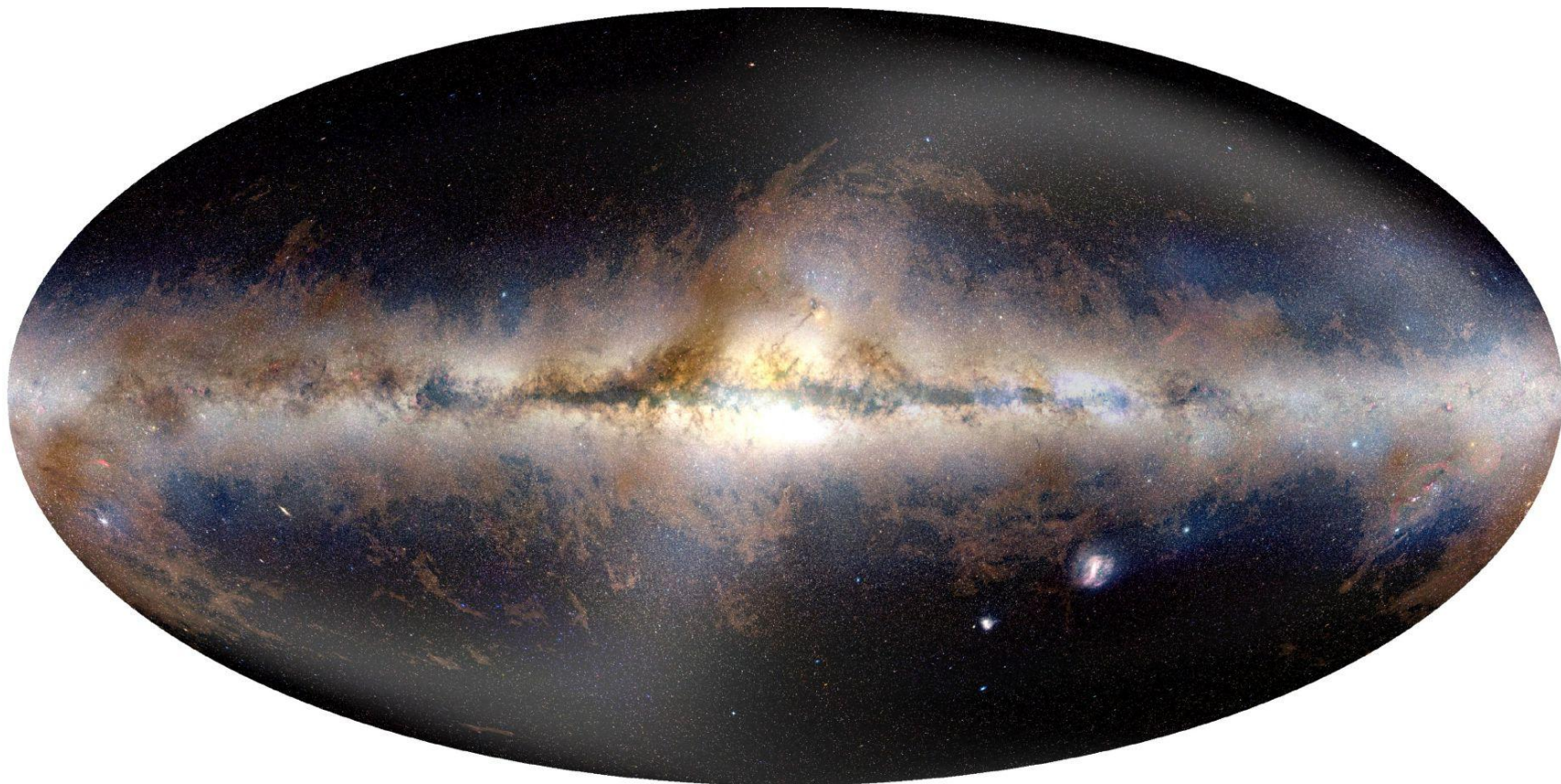


## THE UNIVERSE ACROSS SPACE AND TIME

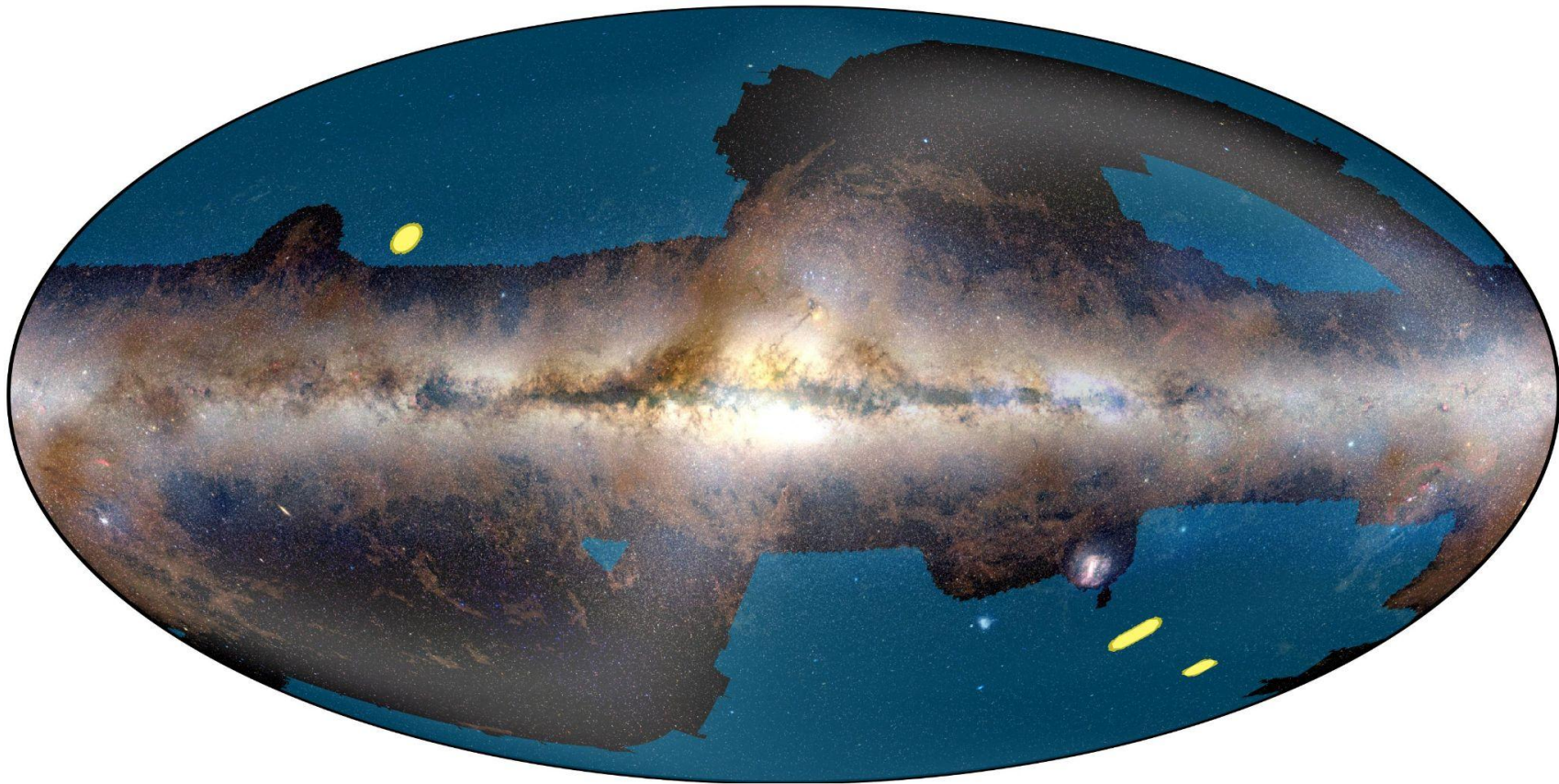


An unknown 'dark energy' appears to drive the current accelerated expansion of our Universe, but scientists do not understand how and why. Euclid will map the last 10 billion years of cosmic history across more than a third of the sky – from cosmic 'noon', the time when most stars were forming, until today. This 'looking back in time' will show us the variations in the cosmic acceleration with extreme precision, revealing the nature of dark energy in this process.

# Notre galaxie, le système solaire, et le ciel extragalactique



# Le grand atlas du ciel extragalactique Euclid : 2024-2029



# Impact visuel des objets astronomiques étendus

But de l'ESA : explorer l'esthétique du cosmos au travers de divers programmes de validation scientifique sur des objets couvrant l'intégralité du champ de vue de Euclid



Pablo Budassi

# La genèse des premières observations scientifiques



SCIENCE & EXPLORATION

## Euclid's first images: the dazzling edge of darkness

07/11/2023 48058 VIEWS 696 LIKES 484284 ID

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DETAILS

RELATED

Today, ESA's Euclid space mission reveals its first full-colour images of the cosmos. Never before has a telescope been able to create such razor-sharp astronomical images across such a large patch of the sky, and looking so far into the distant Universe.

These five images illustrate Euclid's full potential; they show that the telescope is ready to create the most extensive 3D map of the Universe yet, to uncover some of its hidden secrets.

[Read more about Euclid's first images and download the individual images here](#)

© ESA/Euclid/Euclid Consortium/NASA, image processing by J.-C. Cuillandre (CEA Paris-Saclay), G. Anselmi, [CC BY-SA 3.0 IGO](#)

# Impact de l'esthétique du cosmos

Le coup médiatique a démontré combien de beaux visuels permettent de sensibiliser le public à des concepts complexes, comme la mission d'Euclid sur l'univers sombre

## OVERVIEW | ESA MEMBER STATES



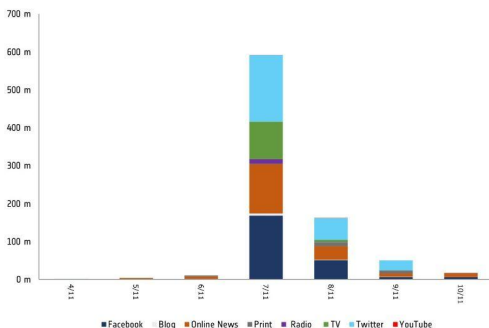
In terms of traditional media within ESA member states, the gross reach amounted to an impressive 342.5 million for the Euclid first images. Traditional media visibility in ESA member states was particularly strong in the UK (thanks in large part to extensive BBC coverage across various channels), France, Spain and Germany which accounted for most of the coverage.

Social media represented 60% of all visibility in ESA member states – driven by strong visibility on Facebook and Twitter. Though not a surprise given the highly visual and shareable assets that were being released. Interesting, and positive, to see ESA accounts not featured too prominently in terms of the reach achieved.

Online news was the most visible traditional media format, representing 23% of all visibility in ESA member states. Followed by TV & Radio with 14%. The peak in coverage coming exactly at 14:15, when the under-embargo ended, indicates the success that sending information and assets to media beforehand had in relation to the impact that was generated.

### Visibility Trend

Visibility by date and by channel (Gross Reach)

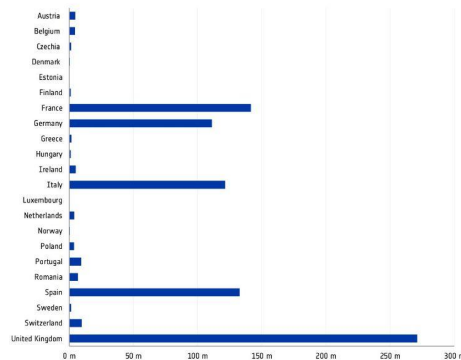


Euclid first images

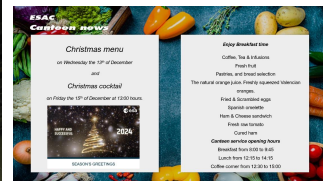
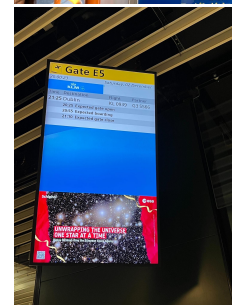
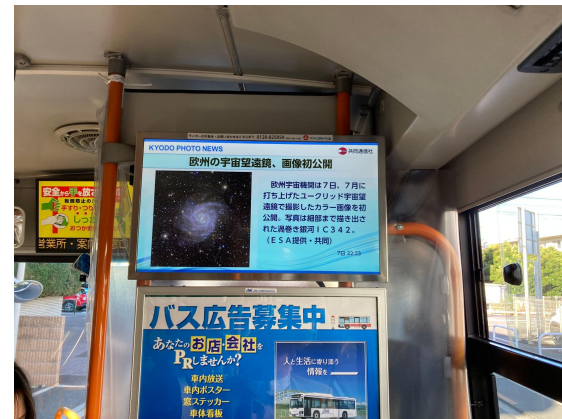
	Traditional media		Social media	
	Gross Reach	Volume	Gross Reach	Volume
Visibility in ESA Member States	342.5 M	3.1 K	506 M	1.7 K
Overall visibility	574.2 M	5.7 K	2.07 Bn	4.2 K

### Markets

Visibility by country\* (Gross Reach)



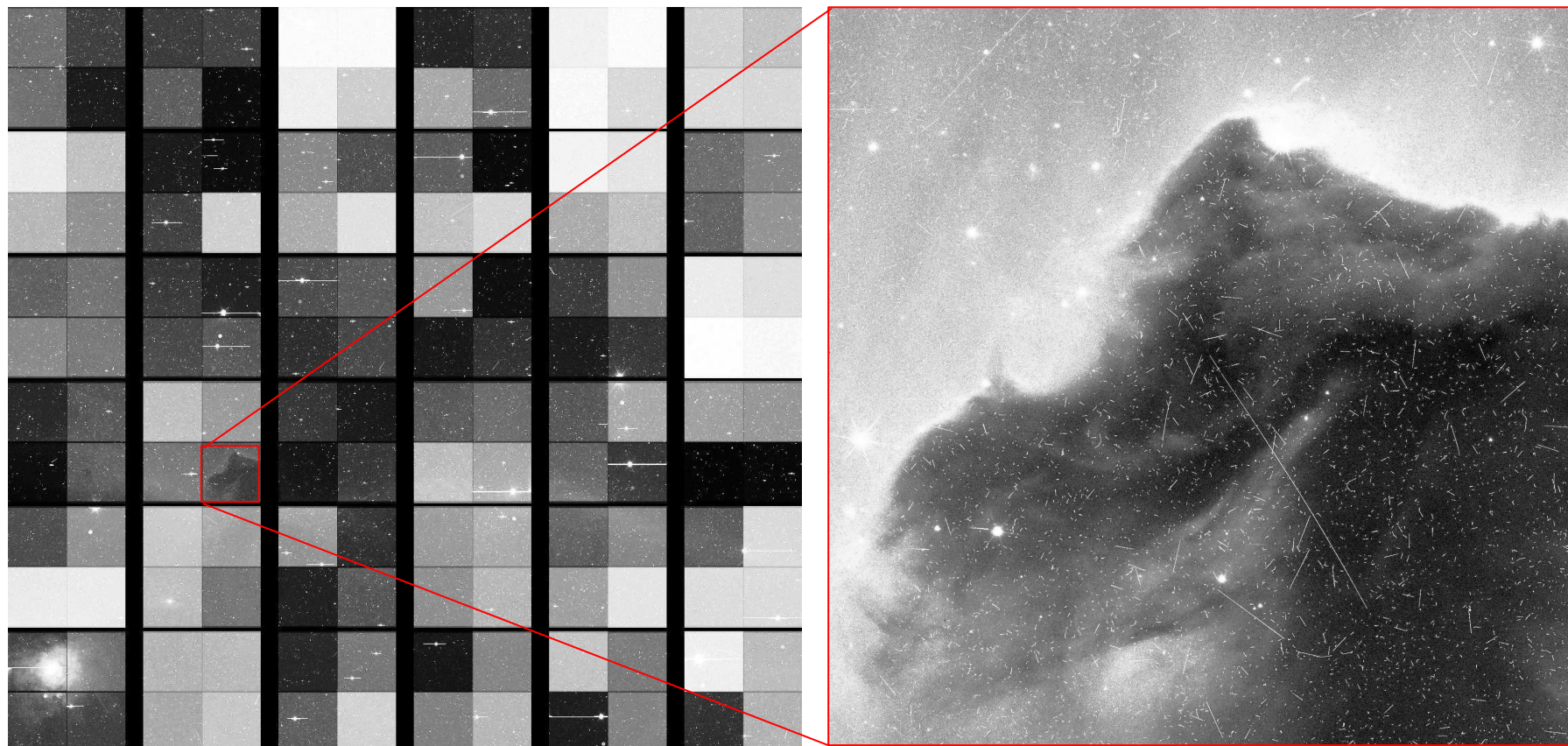
\*Instagram cannot segment by country



# La Nébuleuse de la Tête de Cheval, une référence Euclid

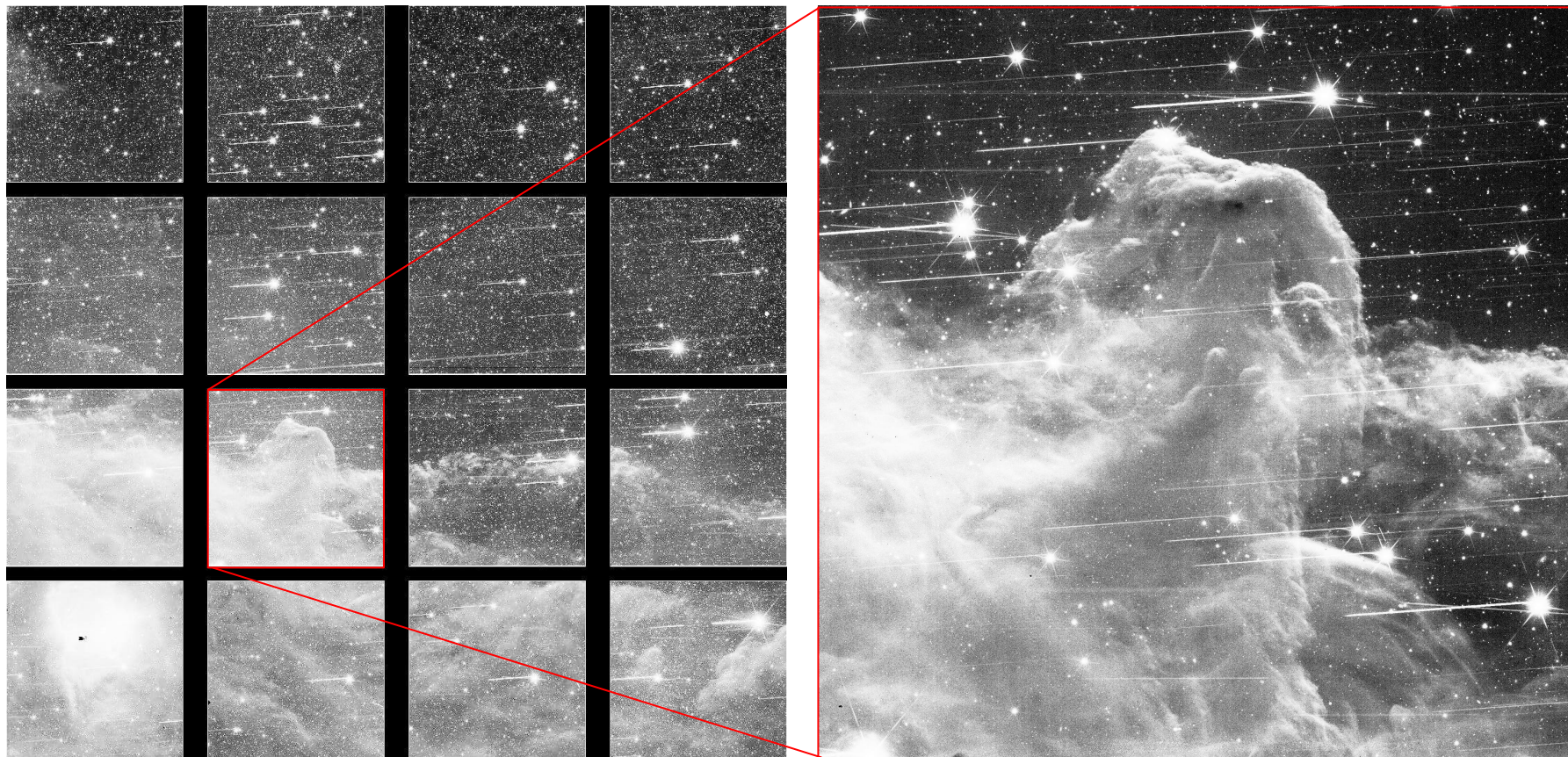


# Le défi des données brutes en provenance de l'espace - VIS





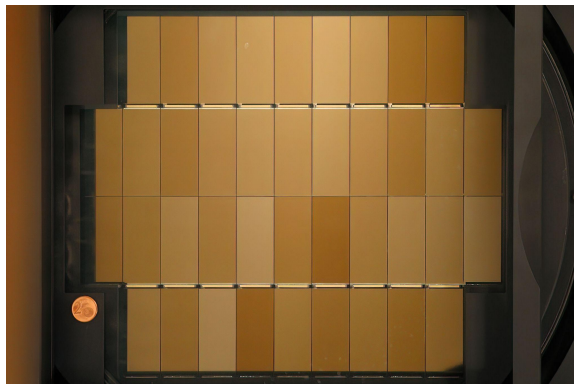
# Le défi des données brutes en provenance de l'espace - NISP



# Une expertise bâtie au fil de trois décennies sur le CFHT



Télescope Canada-France-Hawaii (CFHT)

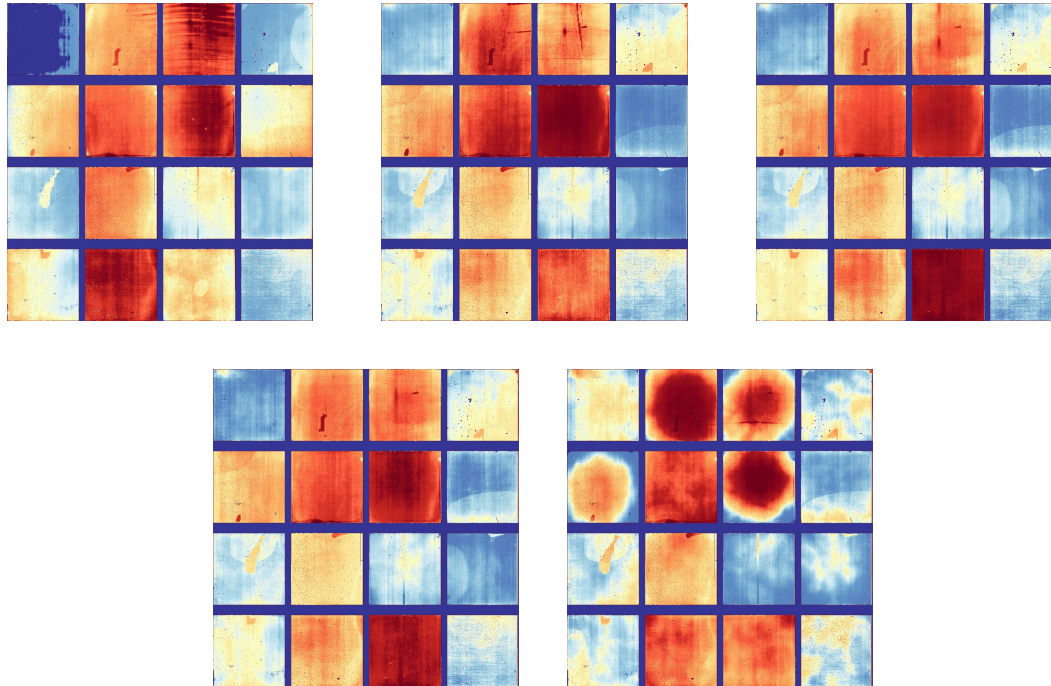


Mosaïque CCD MegaCam et le CFHT



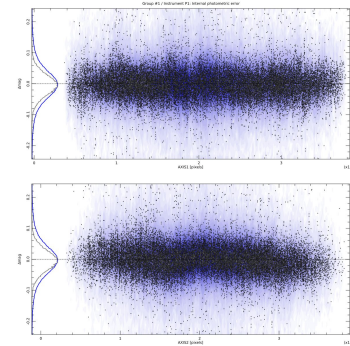
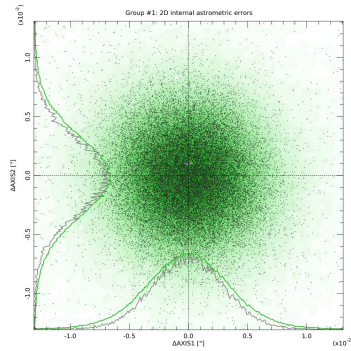
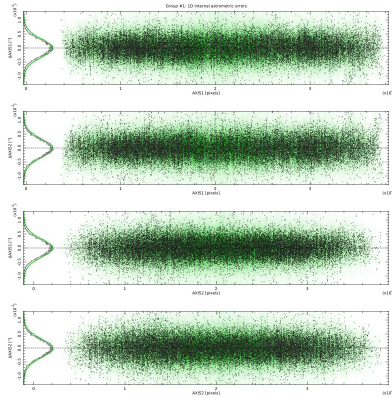
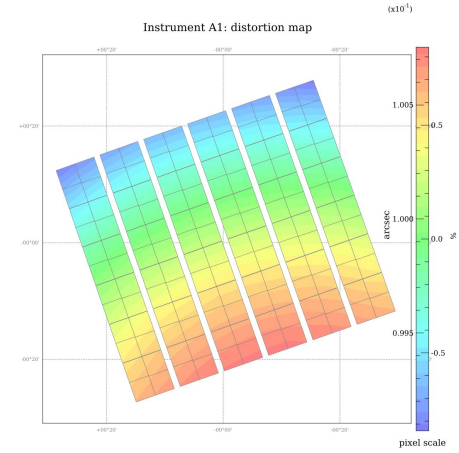
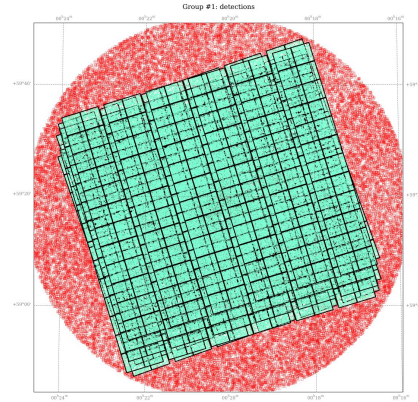
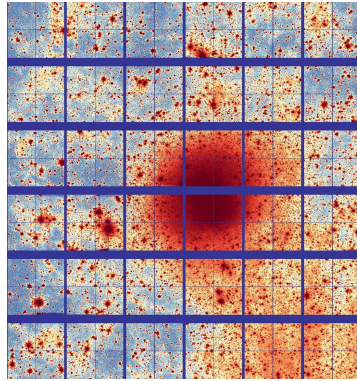
Galaxie spirale NGC 1365 au CFHT

# Correction des multiples signatures instrumentales



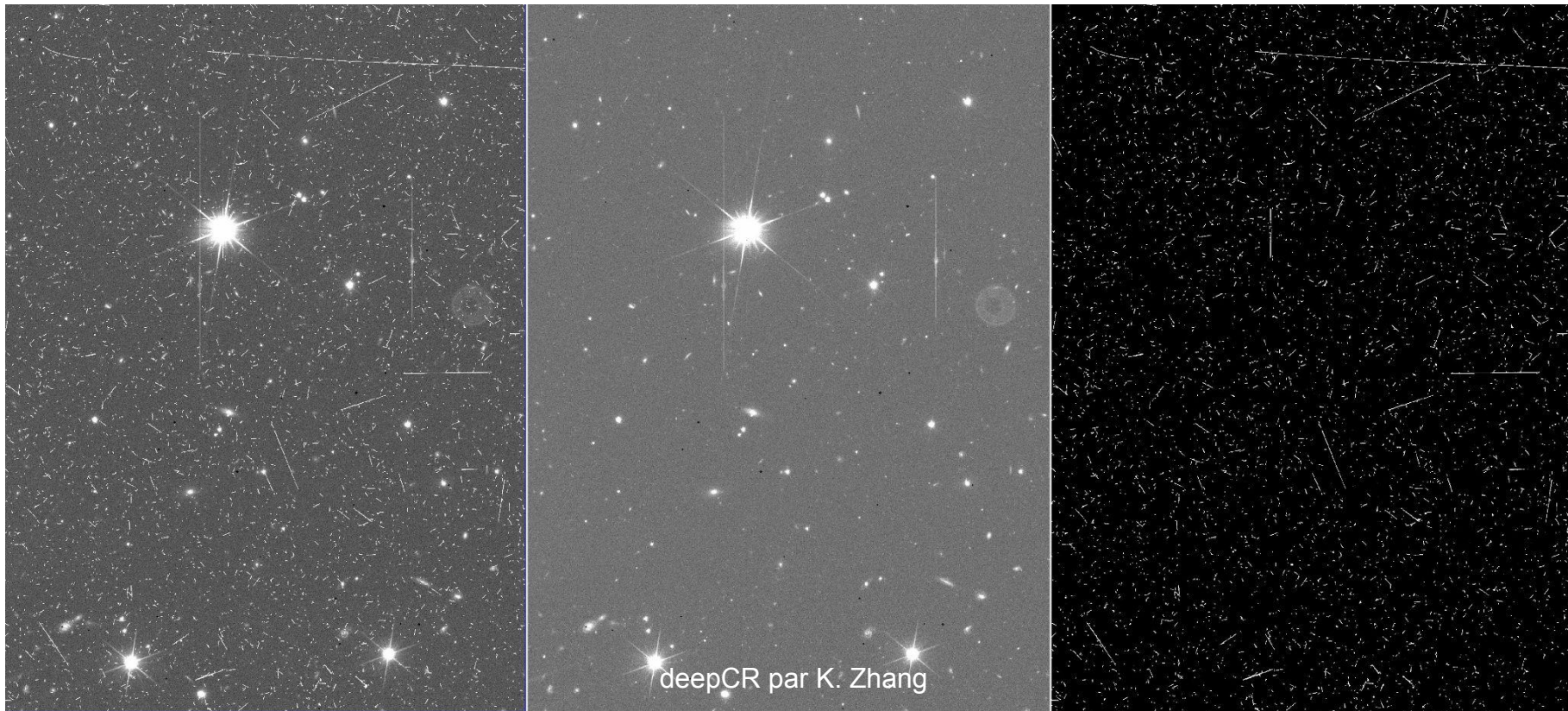
Propriétés du NISP évoluant avec la longueur d'onde

# Correction des distorsions dues à l'optique du télescope



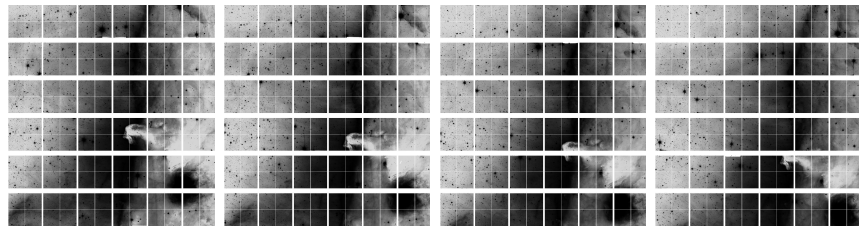
AstrOmatic par Emmanuel Bertin

# Réparation des données par apprentissage



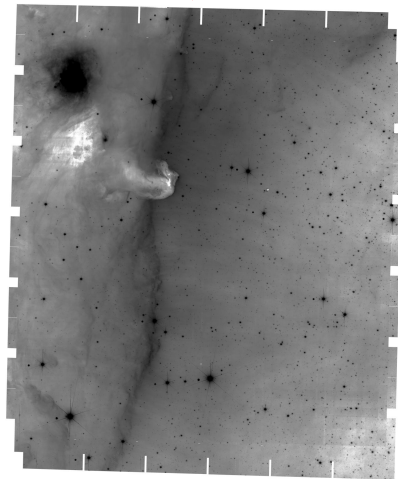
deepCR par K. Zhang

# Reconstruction d'images contiguës du cosmos

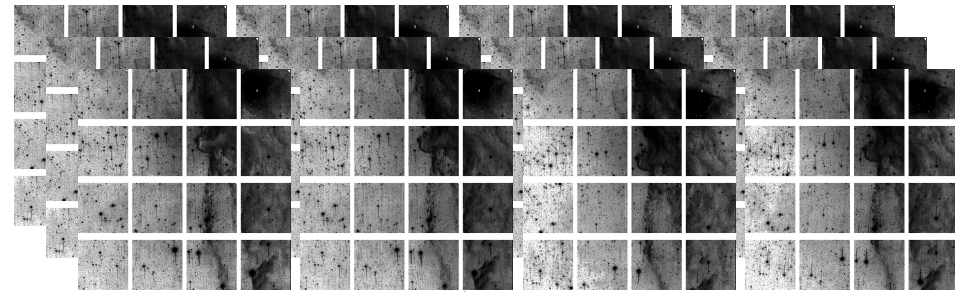


Position 1    Position 2    Position 3    Position 4

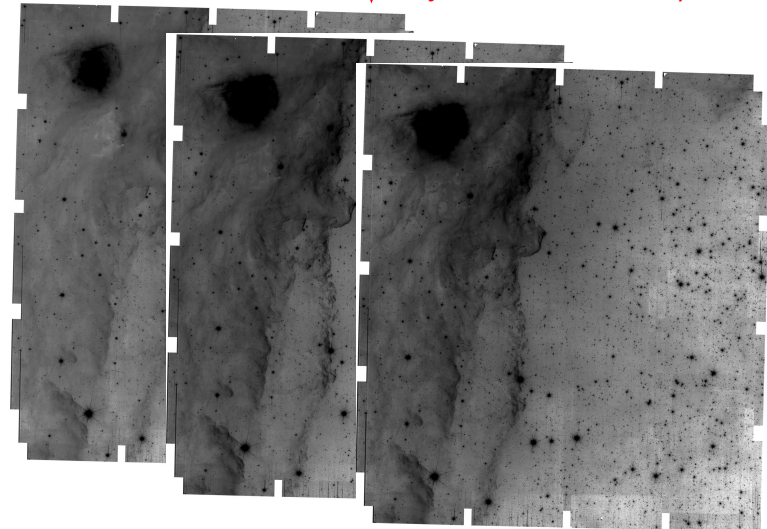
↓ Projection+Rotation+Empilement digital



VIS



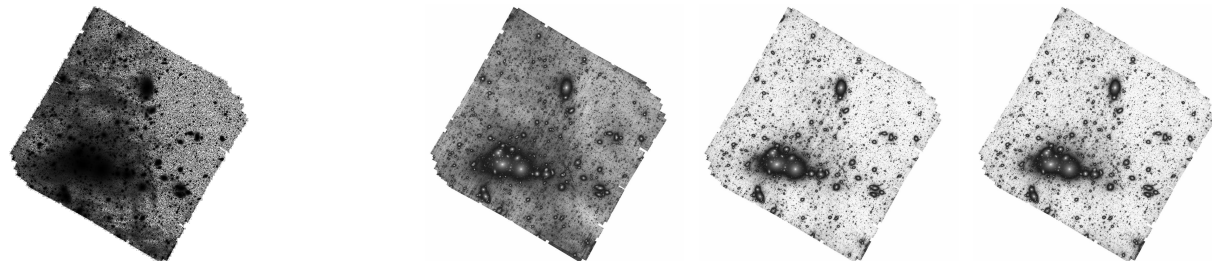
↓ Projection+Rotation+Empilement digital



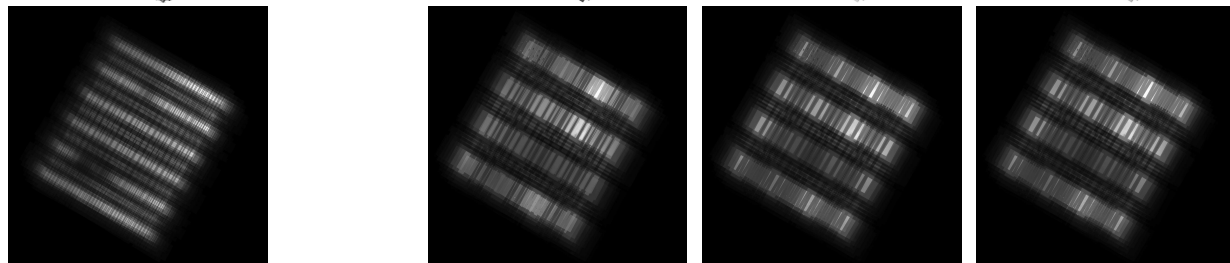
NISP Y,J,H

# Production d'images à vocation scientifique (chaîne ERO)

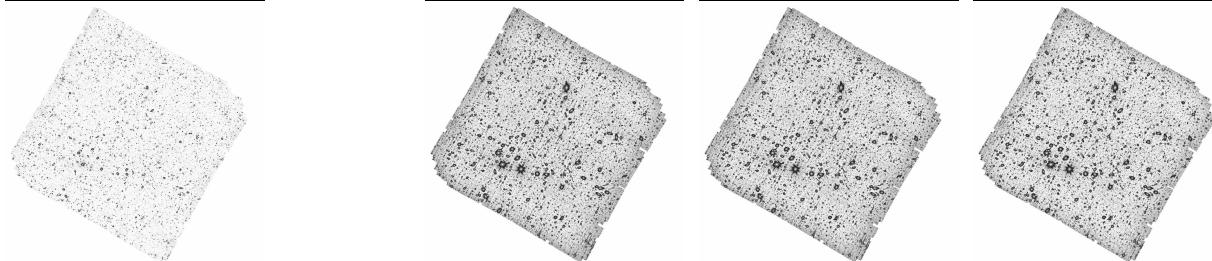
Émissions diffuses



Poids



Sources compactes

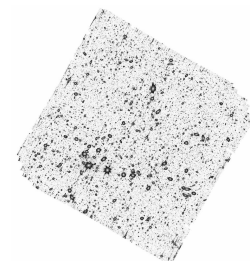


VIS

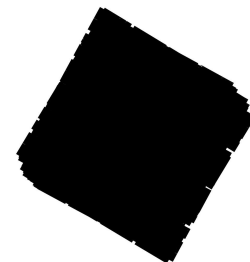
Y

J

H

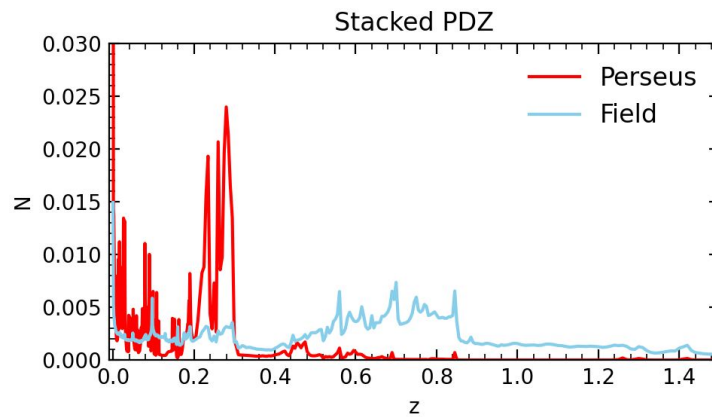
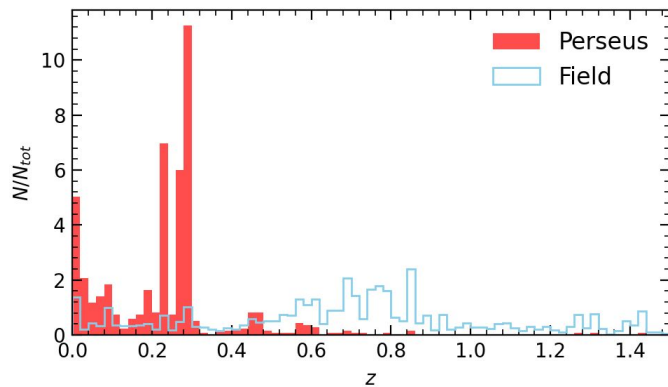
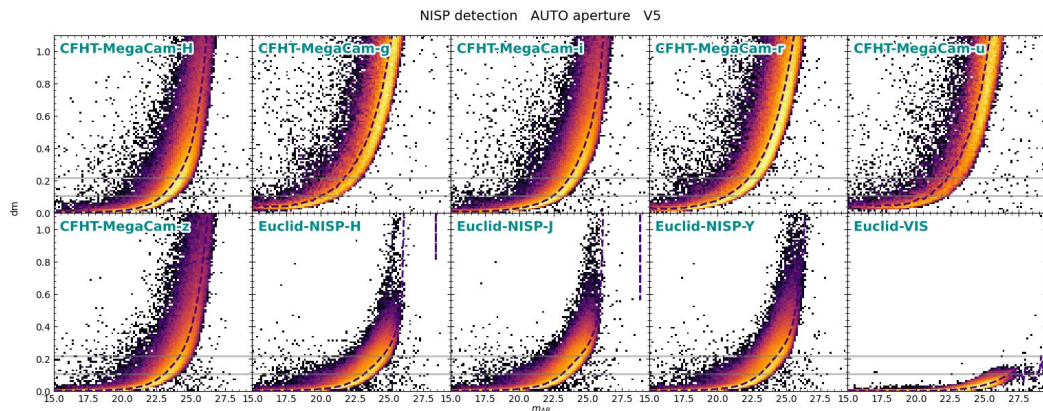
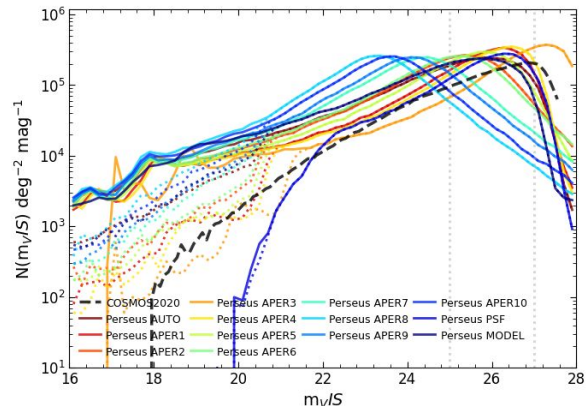


Chi2 (Y/J/H)



Masque VIS/NISP

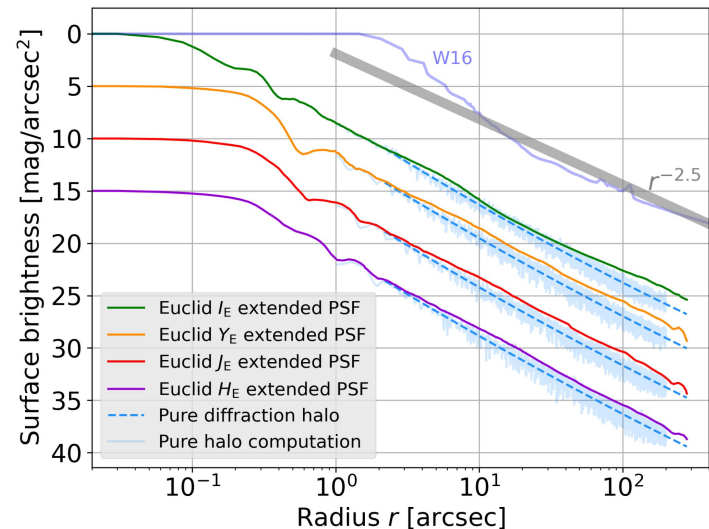
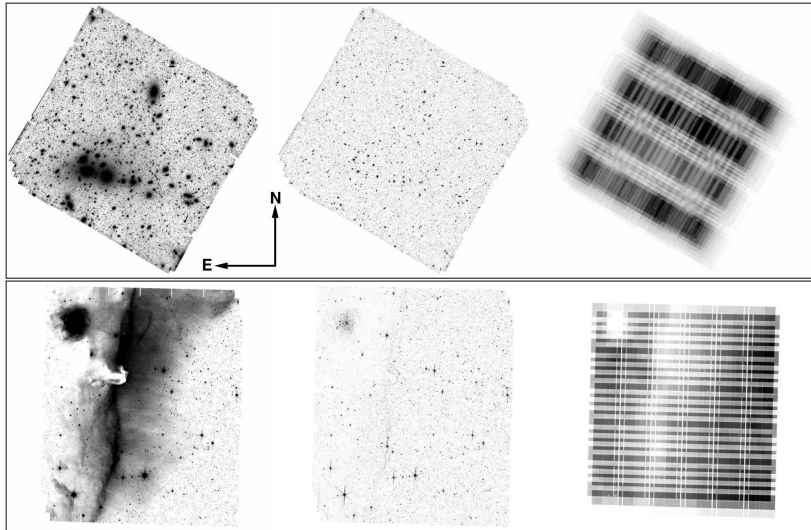
# Production de catalogues scientifiques et contrôle qualité





## Euclid: Early Release Observations – Programme overview and pipeline for compact- and diffuse-emission photometry ★

J.-C. Cuillandre<sup>1</sup>, E. Bertin<sup>1</sup>, M. Bolzonella<sup>2</sup>, H. Bouy<sup>3,4</sup>, S. Gwyn<sup>5</sup>, S. Isani<sup>6</sup>, M. Kluge<sup>7</sup>, O. Lai<sup>8</sup>,  
A. Lançon<sup>9</sup>, D. A. Lang<sup>10</sup>, R. Laureijs<sup>11</sup>, T. Saifollahi<sup>9,12</sup>, M. Schirmer<sup>13</sup>, C. Stone<sup>14</sup>, Abdurro'uf<sup>15</sup>,  
N. Aghanim<sup>16</sup>, B. Altieri<sup>17</sup>, F. Annibali<sup>2</sup>, H. Atek<sup>18</sup>, P. Awad<sup>12</sup>, M. Baes<sup>19</sup>, E. Bañados<sup>13</sup>, D. Barrado<sup>20</sup>,  
S. Belladitta<sup>13,2</sup>, V. Belokurov<sup>21</sup>, A. Boselli<sup>22,23</sup>, F. Bournaud<sup>1</sup>, I. Rovin<sup>24</sup>, R. A. A. Bowler<sup>25</sup>



# La Nébuleuse de la Tête de Cheval vue par Euclid



# La palette de couleurs Euclid

Projeter 3 des 4 couleurs vues par Euclid vers une image Rouge-Vert-Bleu (RGB) pour l'œil humain mène à des nuances uniques, ancrées dans l'astrophysique

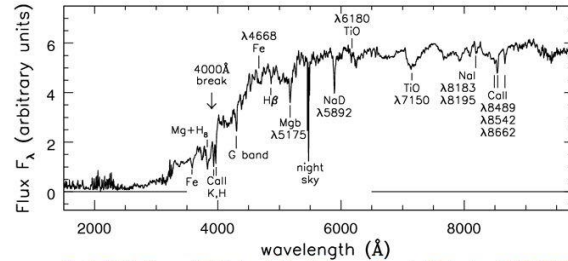
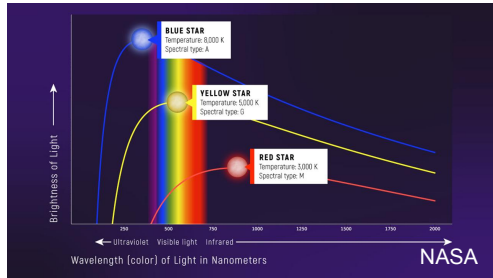
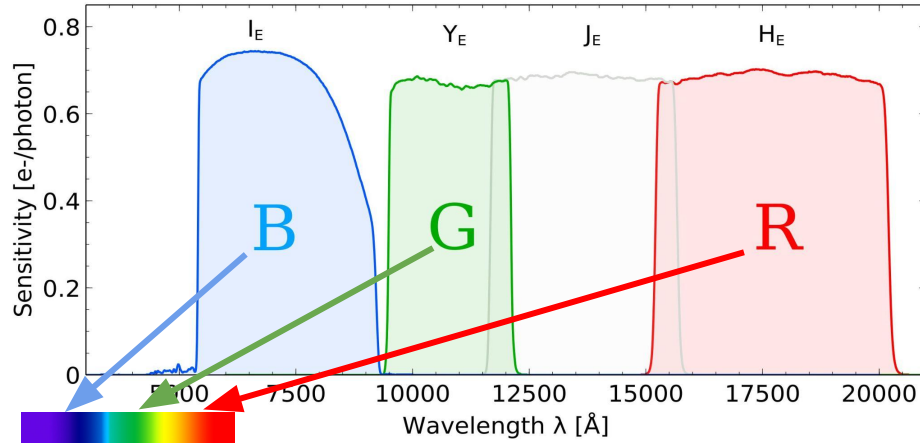
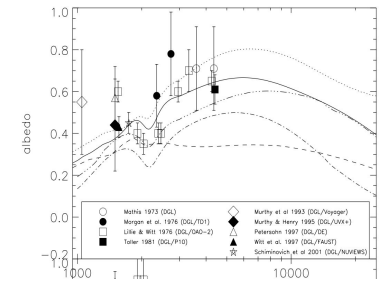
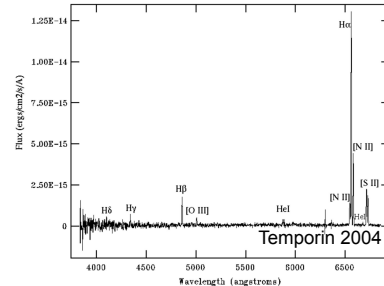
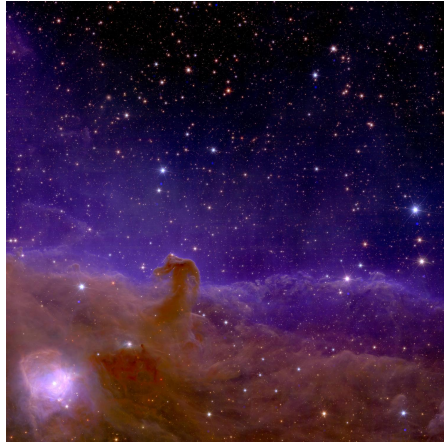


Fig 6.17 (A. Kinney) 'Galaxies in the Universe' Sparke/Gallagher CUP 2007



# Optimisation esthétique de l'image astronomique



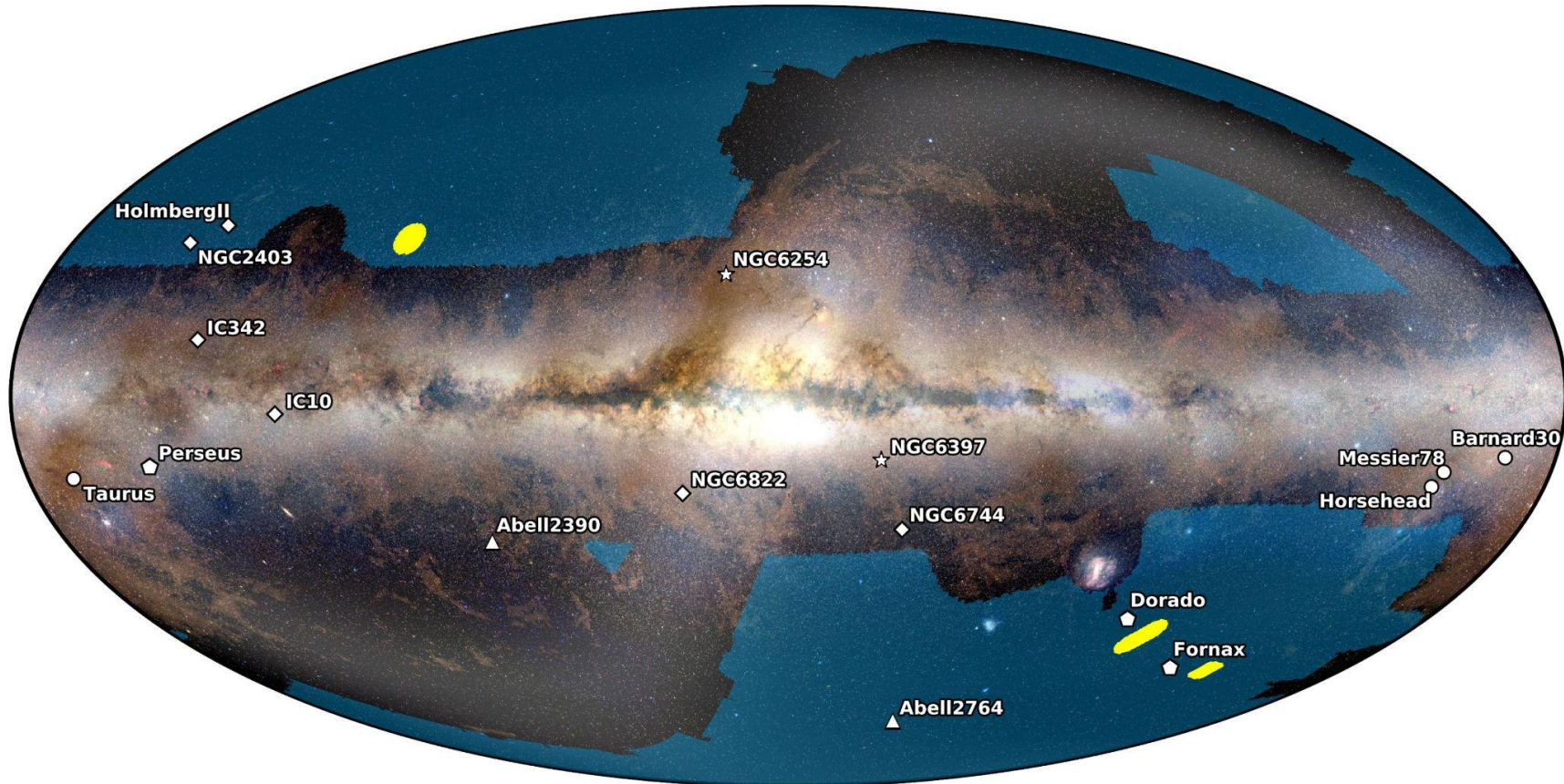
Optimisation : collaboration J.-C. Cuillandre + G. Anselmi



Évaluation sur audience test ESA et divers types d'écrans



# Localisation des premières cibles scientifiques Euclid



# Région de formation d'étoiles Messier 78



Zoom "TV 4K UHD" = 1.4% du champ de vue de Euclid







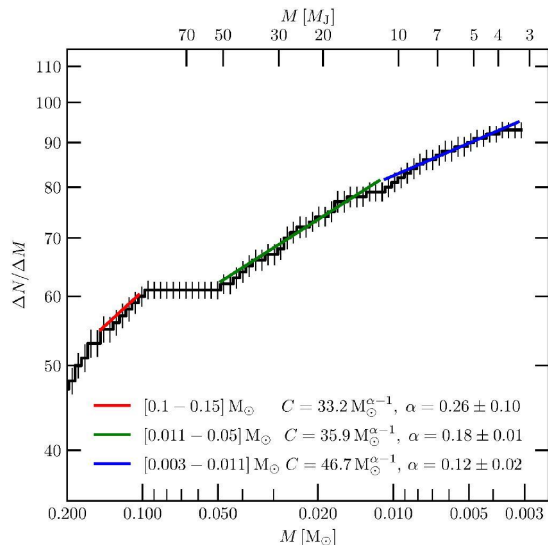
# Région de formation d'étoiles Barnard 33





## ***Euclid*: Early Release Observations – A glance at free-floating new-born planets in the $\sigma$ Orionis cluster★**

E. L. Martín ★<sup>1,2</sup>, M. Žerjal <sup>1,2</sup>, H. Bouy<sup>3,4</sup>, D. Martín-Gonzalez <sup>5</sup>, S. Muñoz Torres <sup>1,2</sup>, D. Barrado <sup>6</sup>,  
J. Olivares <sup>7</sup>, A. Pérez-Garrido <sup>8</sup>, P. Mas-Buitrago <sup>6</sup>, P. Cruz <sup>6</sup>, E. Solano<sup>6</sup>, M. R. Zapatero Osorio <sup>6</sup>,  
N. Lodieu <sup>1,2</sup>, V. J. S. Béjar<sup>1,2</sup>, J.-Y. Zhang <sup>1,2</sup>, C. del Burgo <sup>1,2</sup>, N. Huélamo<sup>6</sup>, R. Laureijs<sup>9</sup>, A. Mora <sup>10</sup>,  
T. Saifollahi <sup>11,12</sup>, J.-C. Cuillandre <sup>13</sup>, M. Schirmer <sup>14</sup>, R. Tata<sup>15</sup>, S. Points <sup>16</sup>, N. Phan-Bao <sup>17,18</sup>.



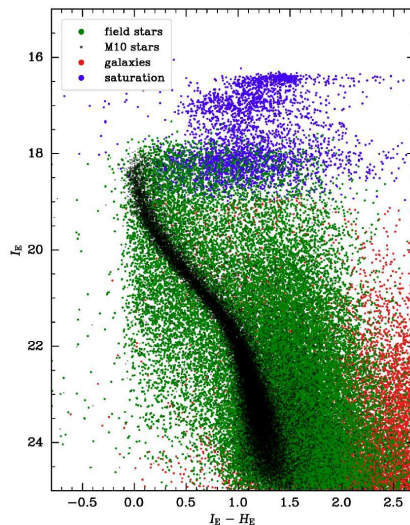
# Amas globulaire NGC 6397





## Euclid: Early Release Observations – Unveiling the morphology of two Milky Way globular clusters out to their periphery★

D. Massari<sup>1</sup>, E. Dalessandro<sup>1</sup>, D. Erkal<sup>2</sup>, E. Balbinot<sup>3,4</sup>, J. Bovy<sup>5</sup>, I. McDonald<sup>6</sup>, A. M. N. Ferguson<sup>7</sup>, S. S. Larsen<sup>8</sup>, A. Lançon<sup>9</sup>, F. Annibali<sup>1</sup>, B. Goldman<sup>10,9</sup>, P. B. Kuzma<sup>7,11</sup>, K. Voggel<sup>12</sup>, T. Saifollahi<sup>4,9</sup>, J.-C. Cuillandre<sup>13</sup>, M. Schirmer<sup>14</sup>, M. Kluge<sup>15</sup>, B. Altieri<sup>16</sup>, A. Amara<sup>2</sup>, S. Andreon<sup>17</sup>, N. Auricchio<sup>1</sup>, M. Baldi<sup>18,1,19</sup>, A. Balestra<sup>20</sup>, S. Bardelli<sup>1</sup>, A. Basset<sup>21</sup>, R. Bender<sup>15,22</sup>, D. Bonino<sup>23</sup>, F. Branchini<sup>24,25,17</sup>



# Galaxie irrégulière NGC 6822







# Galaxie spirale IC 342





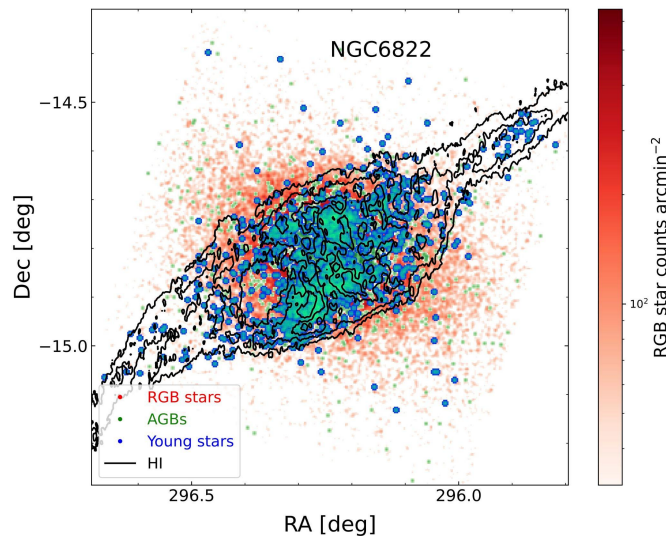
# Galaxie spirale NGC 6744





## ***Euclid*: Early Release Observations – Deep anatomy of nearby galaxies★**

L. K. Hunt<sup>★1</sup>, F. Annibali<sup>2</sup>, J.-C. Cuillandre<sup>3</sup>, A. M. N. Ferguson<sup>4</sup>, P. Jablonka<sup>5</sup>, S. S. Larsen<sup>6</sup>, F. R. Marleau<sup>7</sup>, E. Schinnerer<sup>8</sup>, M. Schirmer<sup>8</sup>, C. Stone<sup>9</sup>, C. Tortora<sup>10</sup>, T. Saifollahi<sup>11,12</sup>, A. Lançon<sup>11</sup>, M. Bolzonella<sup>2</sup>, S. Gwyn<sup>13</sup>, M. Kluge<sup>14</sup>, R. Laureijs<sup>15</sup>, D. Carollo<sup>16</sup>, M. L. M. Collins<sup>17</sup>, P. Dimauro<sup>18,19</sup>, P.-A. Duc<sup>20</sup>, D. Erkal<sup>17</sup>, J. M. Howell<sup>4</sup>, C. Nally<sup>4</sup>, E. Saremi<sup>21</sup>, R. Scaramella<sup>18,22</sup>, V. Belokurov<sup>23</sup>, C. I. Conzelmann<sup>24</sup>, I. H. Knapen<sup>25,26</sup>



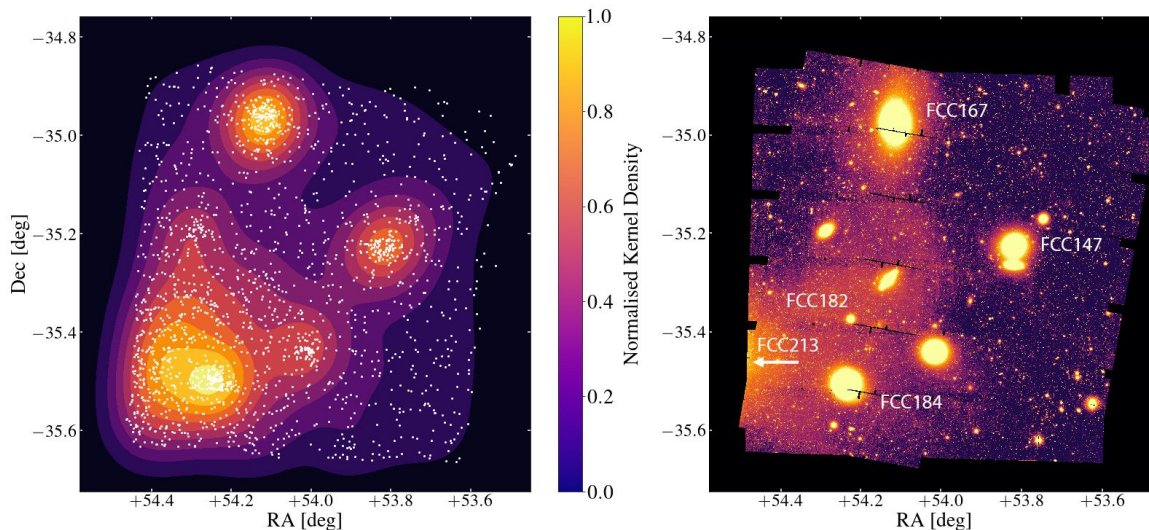
# Le groupe de galaxies Dorado





## ***Euclid*: Early Release Observations – Globular clusters in the Fornax galaxy cluster, from dwarf galaxies to the intracluster field★**

T. Saifollahi<sup>1,2</sup>, K. Voggel<sup>3</sup>, A. Lançon<sup>1</sup>, Michele Cantiello<sup>4</sup>, M. A. Raj<sup>2</sup>, J.-C. Cuillandre<sup>5</sup>, S. S. Larsen<sup>6</sup>, F. R. Marleau<sup>7</sup>, A. Venhola<sup>8</sup>, M. Schirmer<sup>9</sup>, D. Carollo<sup>10</sup>, P.-A. Duc<sup>3</sup>, A. M. N. Ferguson<sup>11</sup>, L. K. Hunt<sup>12</sup>, M. Kümmel<sup>13</sup>, R. Laureijs<sup>14</sup>, O. Marchal<sup>1</sup>, A. A. Nucita<sup>15,16,17</sup>, R. F. Peletier<sup>2</sup>, M. Poulain<sup>8</sup>, M. Reikuba<sup>18</sup>, R. Sánchez-Janssen<sup>19</sup>, M. Urbano<sup>1</sup>, Abdurro'uf<sup>20</sup>, B. Altieri<sup>21</sup>, M. Baes<sup>22</sup>, M. Bolzonella<sup>23</sup>





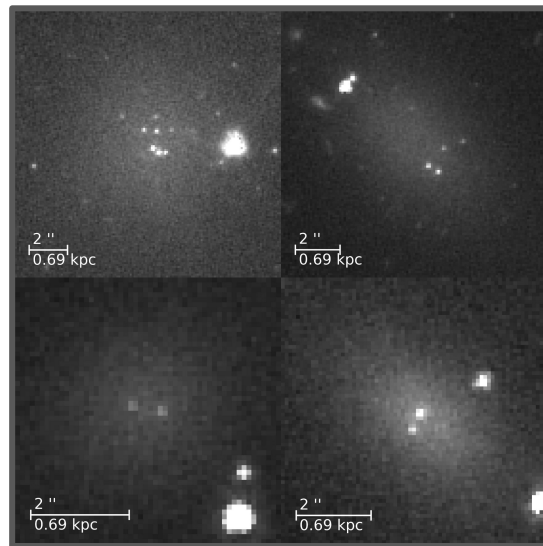
# L'amas de galaxies Perseus





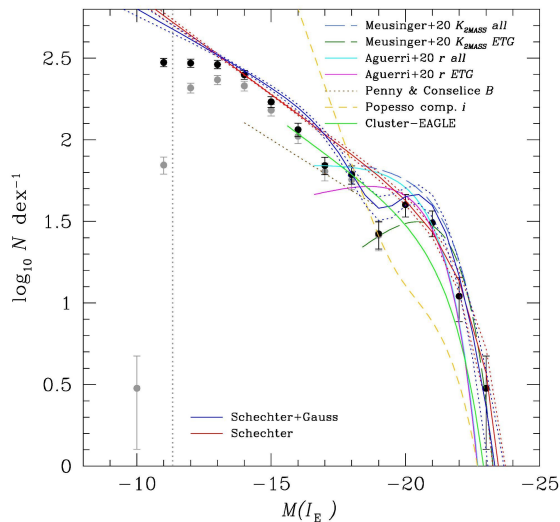
## ***Euclid*: Early Release Observations – Dwarf galaxies in the Perseus galaxy cluster ★**

F. R. Marleau<sup>1</sup>, J.-C. Cuillandre<sup>2</sup>, M. Cantiello<sup>3</sup>, D. Carollo<sup>4</sup>, P.-A. Duc<sup>5</sup>, R. Habas<sup>3</sup>, L. K. Hunt<sup>6</sup>,  
P. Jablonka<sup>7</sup>, M. Mirabile<sup>3,8</sup>, M. Mondelin<sup>2</sup>, M. Poulain<sup>9</sup>, T. Saifollahi<sup>10,11</sup>, R. Sánchez-Janssen<sup>12</sup>,  
E. Sola<sup>13</sup>, M. Urbano<sup>10</sup>, R. Zöller<sup>14,15</sup>, M. Bolzonella<sup>16</sup>, A. Lançon<sup>10</sup>, R. Laureijs<sup>17</sup>, O. Marchal<sup>10</sup>,  
M. Schirmer<sup>18</sup>, C. Stone<sup>19</sup>, A. Boselli<sup>20,21</sup>, A. Ferré-Mateu<sup>22,23</sup>, N. A. Hatch<sup>24</sup>, M. Kluge<sup>15</sup>



## ***Euclid*: Early Release Observations – Overview of the Perseus cluster and analysis of its luminosity and stellar mass functions★**

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## ***Euclid*: Early Release Observations – The intracluster light and intracluster globular clusters of the Perseus cluster**★

M. Kluge<sup>1</sup>, N. A. Hatch<sup>★★2</sup>, M. Montes<sup>3,4</sup>, J. B. Golden-Marx<sup>2</sup>, A. H. Gonzalez<sup>5</sup>, J.-C. Cuillandre<sup>6</sup>, M. Bolzonella<sup>7</sup>, A. Lançon<sup>8</sup>, R. Laureijs<sup>9</sup>, T. Saifollahi<sup>8,10</sup>, M. Schirmer<sup>11</sup>, C. Stone<sup>12</sup>, A. Boselli<sup>13,14</sup>, M. Cantiello<sup>15</sup>, J. G. Sorce<sup>16,17,18</sup>, F. R. Marleau<sup>19</sup>, P.-A. Duc<sup>20</sup>, E. Sola<sup>21</sup>, M. Urbano<sup>8</sup>, S. L. Ahad<sup>22,23</sup>, V. M. Robit<sup>24</sup>, S. D. Bamford<sup>2</sup>, C. Bellhouse<sup>2</sup>, E. Ruizgroves<sup>25,26</sup>, B. Dimareo<sup>27,28</sup>, E. Durret<sup>29</sup>, A. Ellian<sup>30</sup>



# Amas de galaxies Abell 2764 et une étoile brillante





# Amas de galaxies Abell 2390

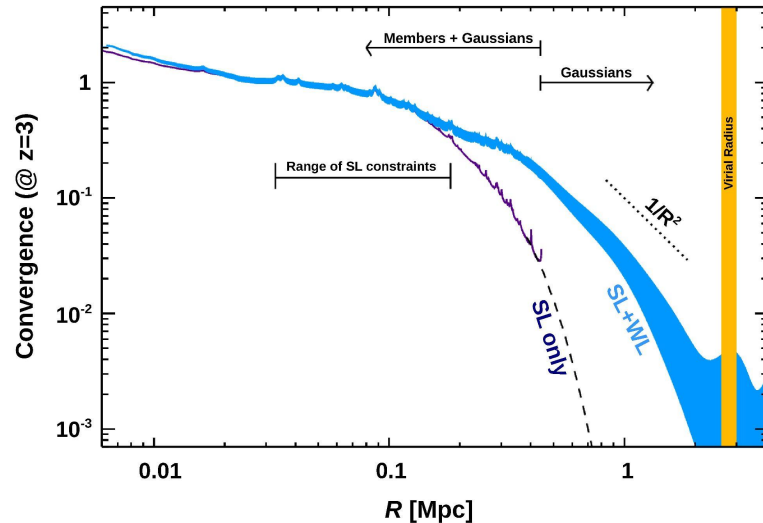






## ***Euclid*: Early Release Observations – A preview of the *Euclid* era through a galaxy cluster magnifying lens★**

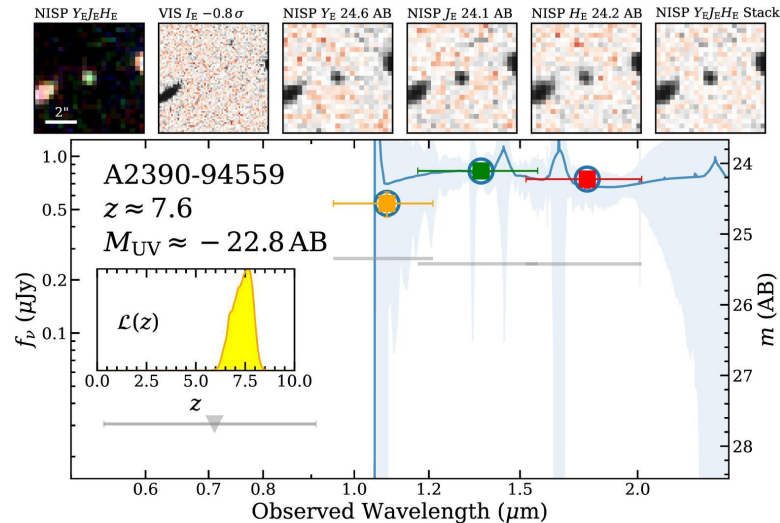
H. Atek<sup>★1</sup>, R. Gavazzi<sup>2,1</sup>, J. R. Weaver<sup>3</sup>, J. M. Diego<sup>4</sup>, T. Schrabback<sup>5</sup>, N. A. Hatch<sup>6</sup>, N. Aghanim<sup>7</sup>, H. Dole<sup>7</sup>, W. G. Hartley<sup>8</sup>, S. Taamoli<sup>9</sup>, G. Congedo<sup>10</sup>, Y. Jimenez-Teja<sup>11,12</sup>, J.-C. Cuillandre<sup>13</sup>, E. Bañados<sup>14</sup>, S. Belladitta<sup>14,15</sup>, R. A. A. Bowler<sup>16</sup>, M. Franco<sup>17</sup>, M. Jauzac<sup>18,19,20,21</sup>, G. Mahler<sup>22,18,19</sup>, J. Richard<sup>23</sup>, P.-F. Rocci<sup>7</sup>, S. Serjeant<sup>24</sup>, S. Toft<sup>25,26</sup>, D. Abriola<sup>27</sup>, P. Bergamini<sup>27,15</sup>, A. Riviero<sup>28,29</sup>, P. Dimauro<sup>30,12</sup>, M. Ezziati<sup>2</sup>, I. B. Golden-Mary<sup>6</sup>



# Science ERO : galaxies de l'Univers primordial

## ***Euclid*: Early Release Observations – NISP-only sources and the search for luminous $z = 6–8$ galaxies★**

J. R. Weaver<sup>★1</sup>, S. Taamoli<sup>2</sup>, C. J. R. McPartland<sup>3,4</sup>, L. Zalesky<sup>5</sup>, N. Allen<sup>6</sup>, S. Toft<sup>6,4</sup>, D. B. Sanders<sup>5</sup>, H. Atek<sup>7</sup>,  
R. A. A. Bowler<sup>8</sup>, D. Stern<sup>9</sup>, C. J. Conselice<sup>8</sup>, B. Mobasher<sup>2</sup>, I. Szapudi<sup>5</sup>, P. R. M. Eisenhardt<sup>9</sup>, G. Murphree<sup>5</sup>,  
I. Valdes<sup>5</sup>, K. Ito<sup>10</sup>, S. Belladitta<sup>11,12</sup>, P. A. Oesch<sup>13,4,6</sup>, S. Serjeant<sup>14</sup>, D. J. Mortlock<sup>15,16</sup>, N. A. Hatch<sup>17</sup>, M. Kluge<sup>18</sup>,  
B. Milvang-Jensen<sup>6,4,3</sup>, G. Rodighiero<sup>19,20</sup>, F. Bañados<sup>11</sup>, I. M. Diego<sup>21</sup>, R. Gavazzi<sup>22,7</sup>, G. Congedo<sup>23</sup>





<https://www.cosmos.esa.int/web/euclid/ero-public-release>

### **Euclid: Early Release Observations – Programme overview and pipeline for compact- and diffuse-emission photometry** \*

J.-C. Cuillandre<sup>1</sup>, E. Bertin<sup>1</sup>, M. Bolzonella<sup>2</sup>, H. Bouy<sup>3,4</sup>, S. Gwyn<sup>5</sup>, S. Isani<sup>6</sup>, M. Kluge<sup>7</sup>, O. Lai<sup>8</sup>, A. Lançon<sup>9</sup>, D. A. Lane<sup>10</sup>, P. Lemaître<sup>11</sup>, T. Saifollahi<sup>12</sup>, M. Schirmer<sup>13</sup>, C. Stone<sup>14</sup>, A. S. Székely<sup>15</sup>

### **Euclid: Early Release Observations – A glance at free-floating new-born planets in the $\sigma$ Orionis cluster** \*

E. L. Martín<sup>1,2</sup>, M. Žerjal<sup>1,2</sup>, H. Bouy<sup>3,4</sup>, D. Martín-González<sup>5</sup>, S. Muñoz Torres<sup>1,2</sup>, D. Barrado<sup>6</sup>, I. Olivares<sup>7</sup>, A. Pérez-Garrido<sup>8</sup>, P. Mac. Brito<sup>9</sup>, P. Cruz<sup>6</sup>, E. Salasnó<sup>6</sup>, M. R. Zapatero-Ostina<sup>6</sup>

### **Euclid: Early Release Observations – Unveiling the morphology of two Milky Way globular clusters out to their periphery** \*

D. Massari<sup>1</sup>, E. Dalessandro<sup>1</sup>, D. Erkal<sup>2</sup>, E. Balbinot<sup>3,4</sup>, J. Bovy<sup>5</sup>, I. McDonald<sup>6</sup>, A. M. N. Ferguson<sup>7</sup>, S. S. Larsen<sup>8</sup>, A. Lançon<sup>9</sup>, F. Azzarello<sup>10,9</sup>, D. Caldwell<sup>10,9</sup>, D. B. Kono<sup>7,11</sup>, K. Vassart<sup>12</sup>, T. Saifollahi<sup>13,4,9</sup>

### **Euclid: Early Release Observations – Deep anatomy of nearby galaxies** \*

L. K. Hunt<sup>1</sup>, F. Annibali<sup>2</sup>, J.-C. Cuillandre<sup>3</sup>, A. M. N. Ferguson<sup>4</sup>, P. Jablonka<sup>5</sup>, S. S. Larsen<sup>6</sup>, F. R. Marleau<sup>7</sup>, F. Schinnerer<sup>8</sup>, M. Schirmer<sup>8</sup>, C. Stone<sup>9</sup>, C. Tortora<sup>10</sup>, T. Saifollahi<sup>11,12</sup>, A. Lançon<sup>11</sup>, M. Bolzonella<sup>2</sup>, S. Gwyn<sup>13</sup>

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### **Euclid: Early Release Observations – Dwarf galaxies in the Perseus galaxy cluster** \*

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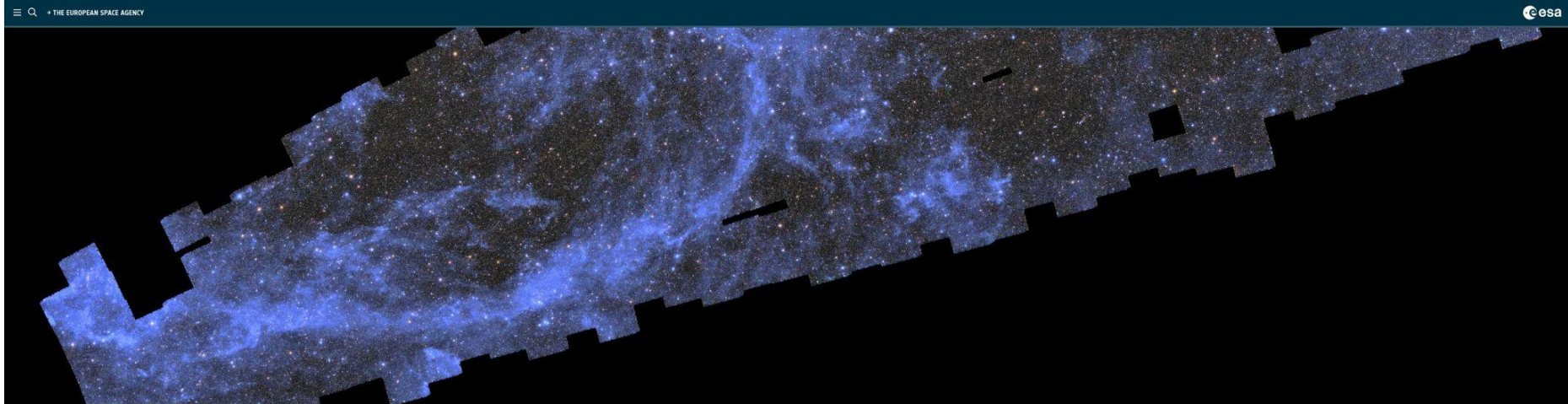
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H. Atek<sup>1</sup>, R. Gavazzi<sup>2,1</sup>, J. R. Weaver<sup>3</sup>, J. M. Diego<sup>4</sup>, T. Schrabback<sup>5</sup>, N. A. Hatch<sup>6</sup>, N. Aghanim<sup>7</sup>, H. Dole<sup>7</sup>, W. G. Hartley<sup>8</sup>, S. Tamali<sup>9</sup>, G. Conzola<sup>10</sup>, Y. Jiménez Teja<sup>11,12</sup>, J.-C. Cuillandre<sup>13</sup>, E. Bañados<sup>14</sup>, S. Ballarín<sup>14,15</sup>

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# La première page du grand atlas cosmique d'Euclid

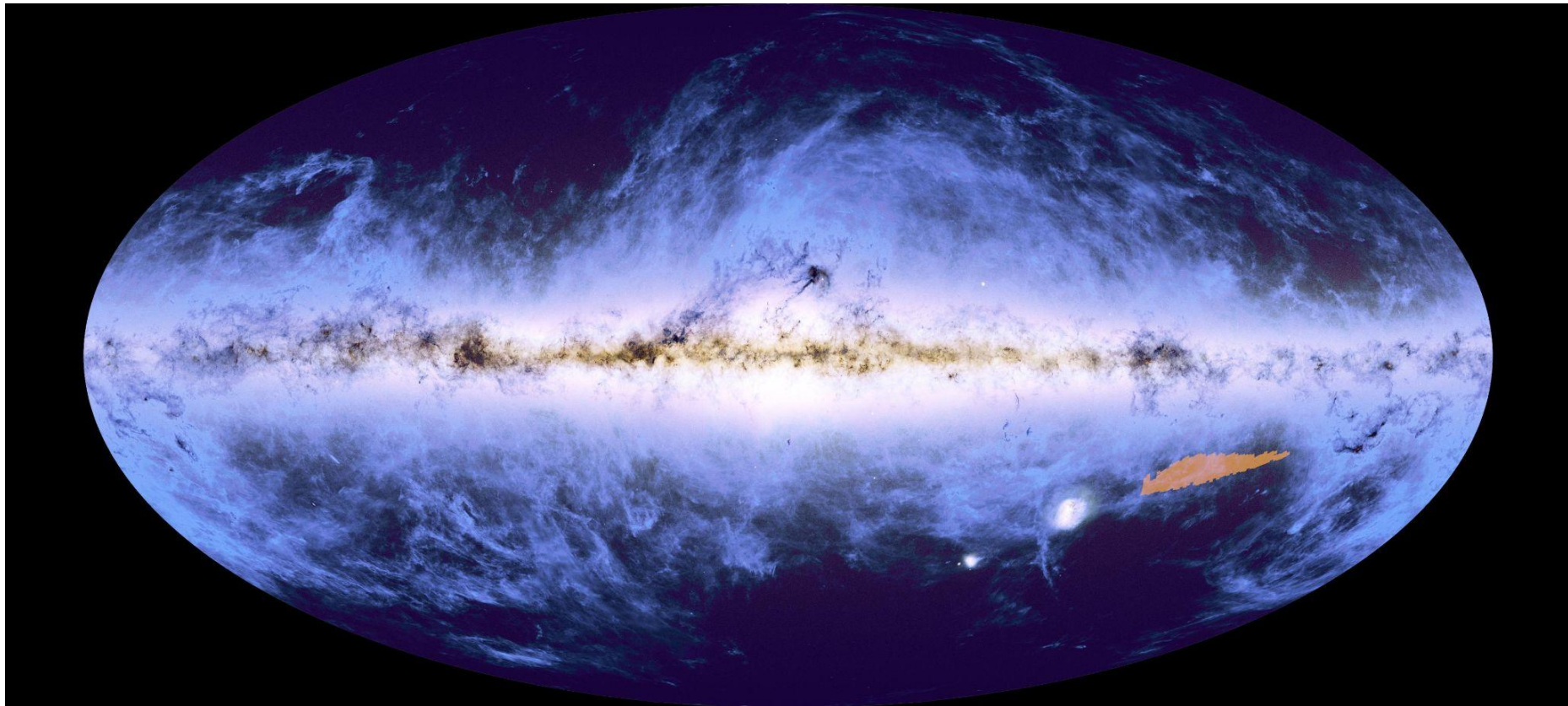


SCIENCE & EXPLORATION

## Zoom into the first page of ESA Euclid's great cosmic atlas

[https://www.esa.int/Science\\_Exploration/Space\\_Science/Euclid/Zoom\\_into\\_the\\_first\\_page\\_of\\_ESA\\_Euclid\\_s\\_great\\_cosmic\\_atlas](https://www.esa.int/Science_Exploration/Space_Science/Euclid/Zoom_into_the_first_page_of_ESA_Euclid_s_great_cosmic_atlas)

## 2 semaines du relevé Euclid (zone colorée sur Gaia+Planck)

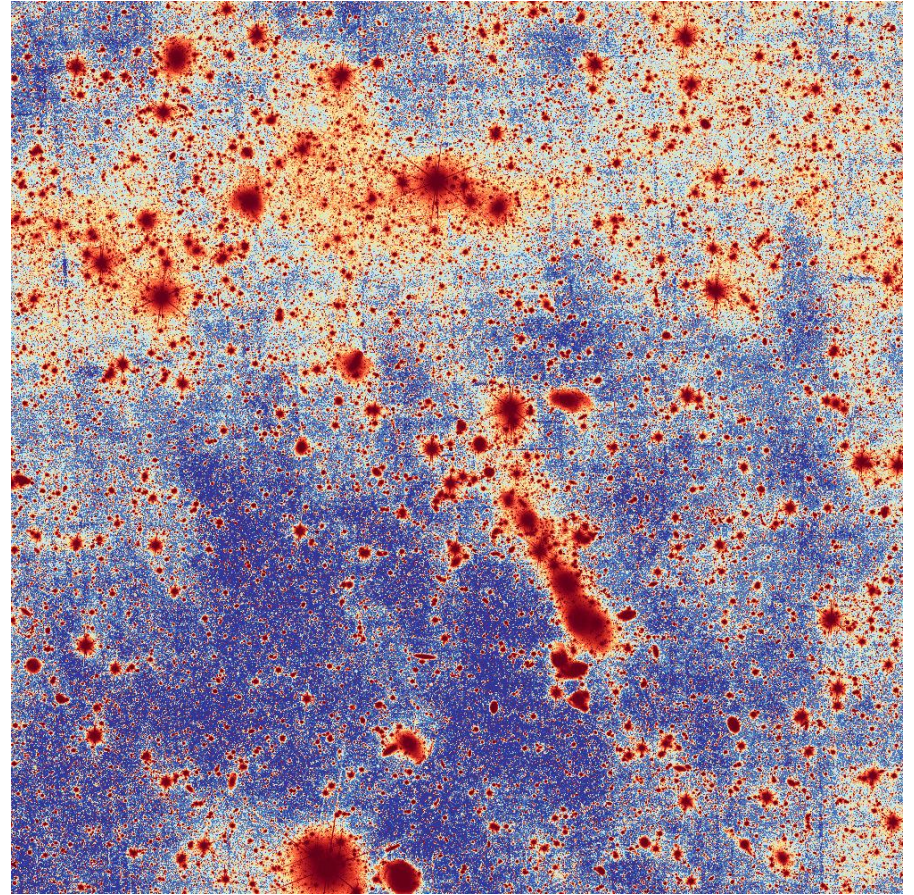
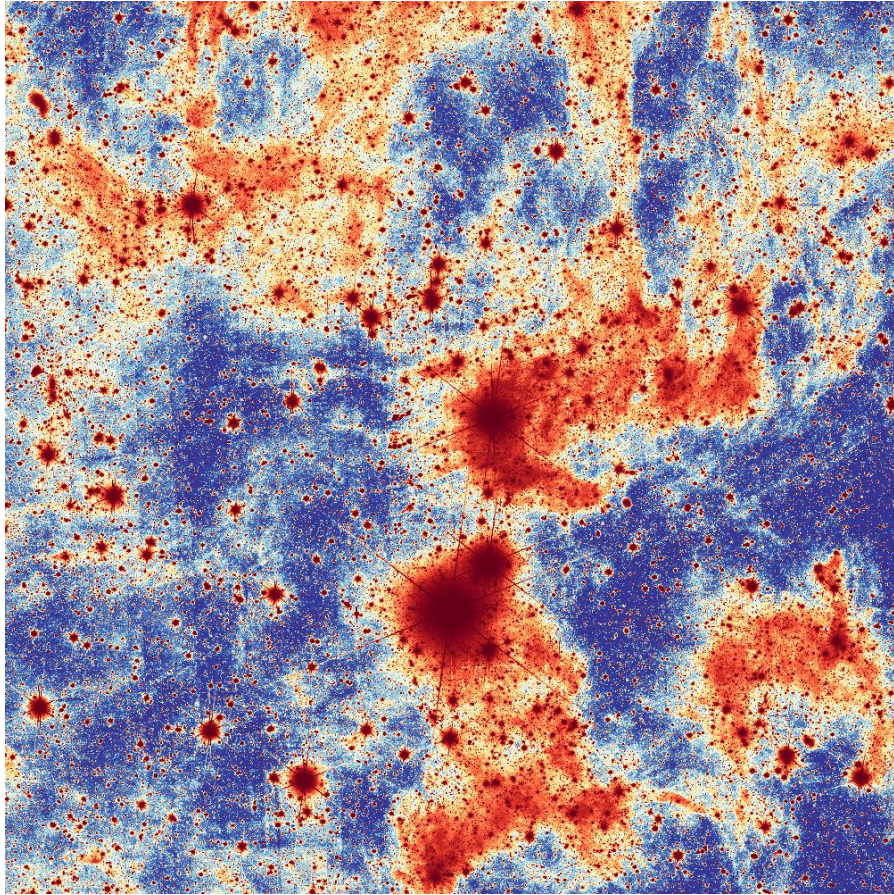


# 260 observations Euclid = 800 gigapixels total



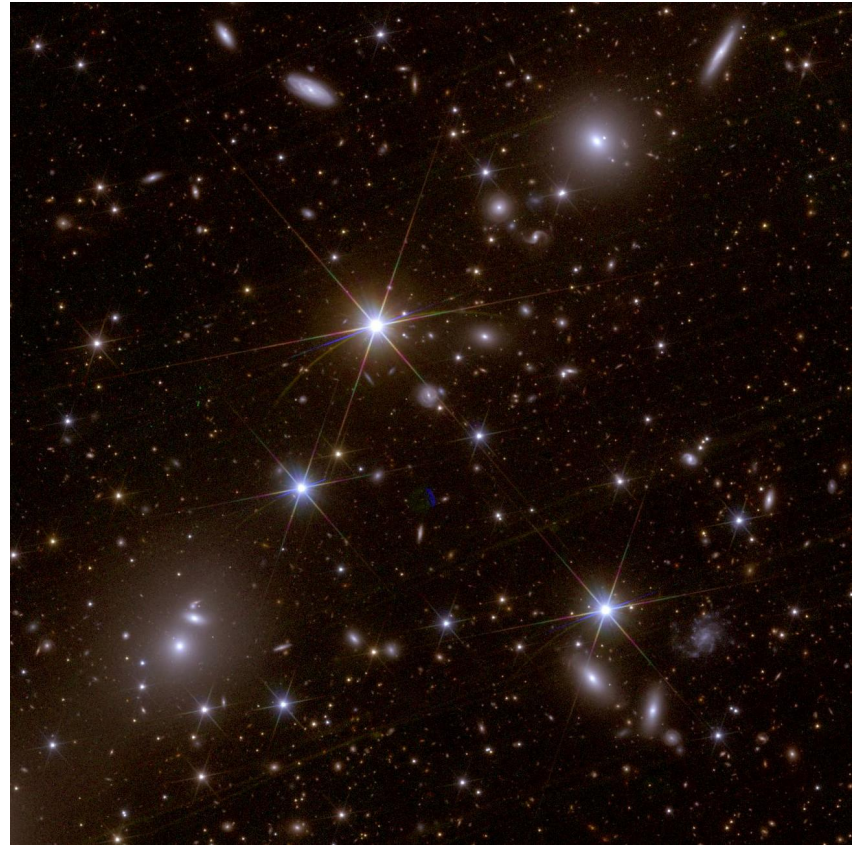
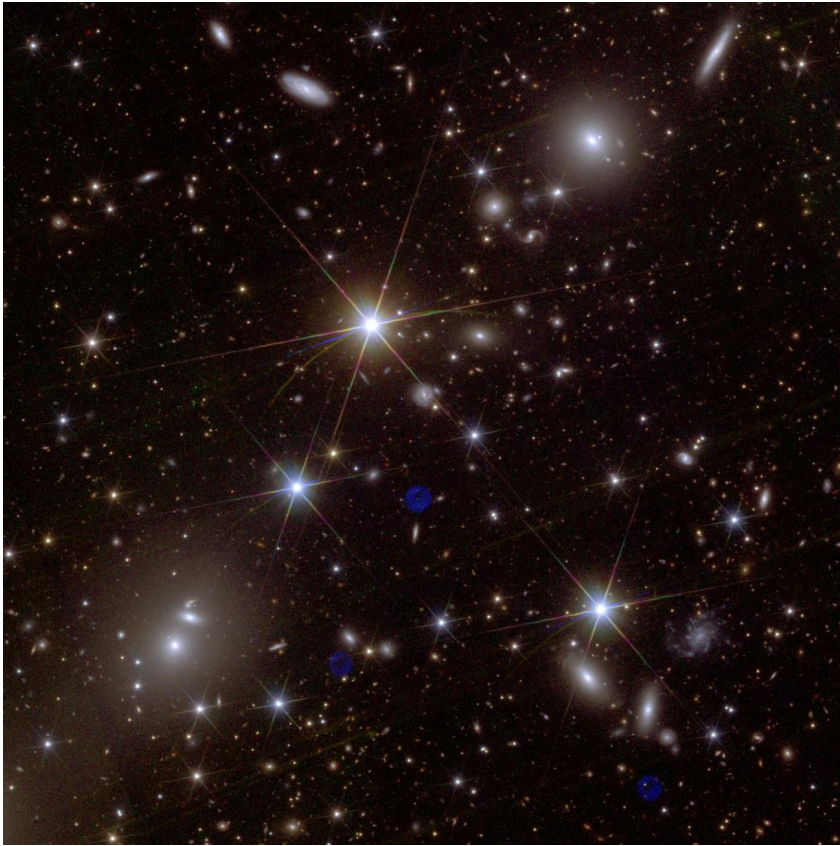
Observations VIS du 25/03 au 08/04 2024 (2 semaines)

# Préservation des très faibles brillances de surface



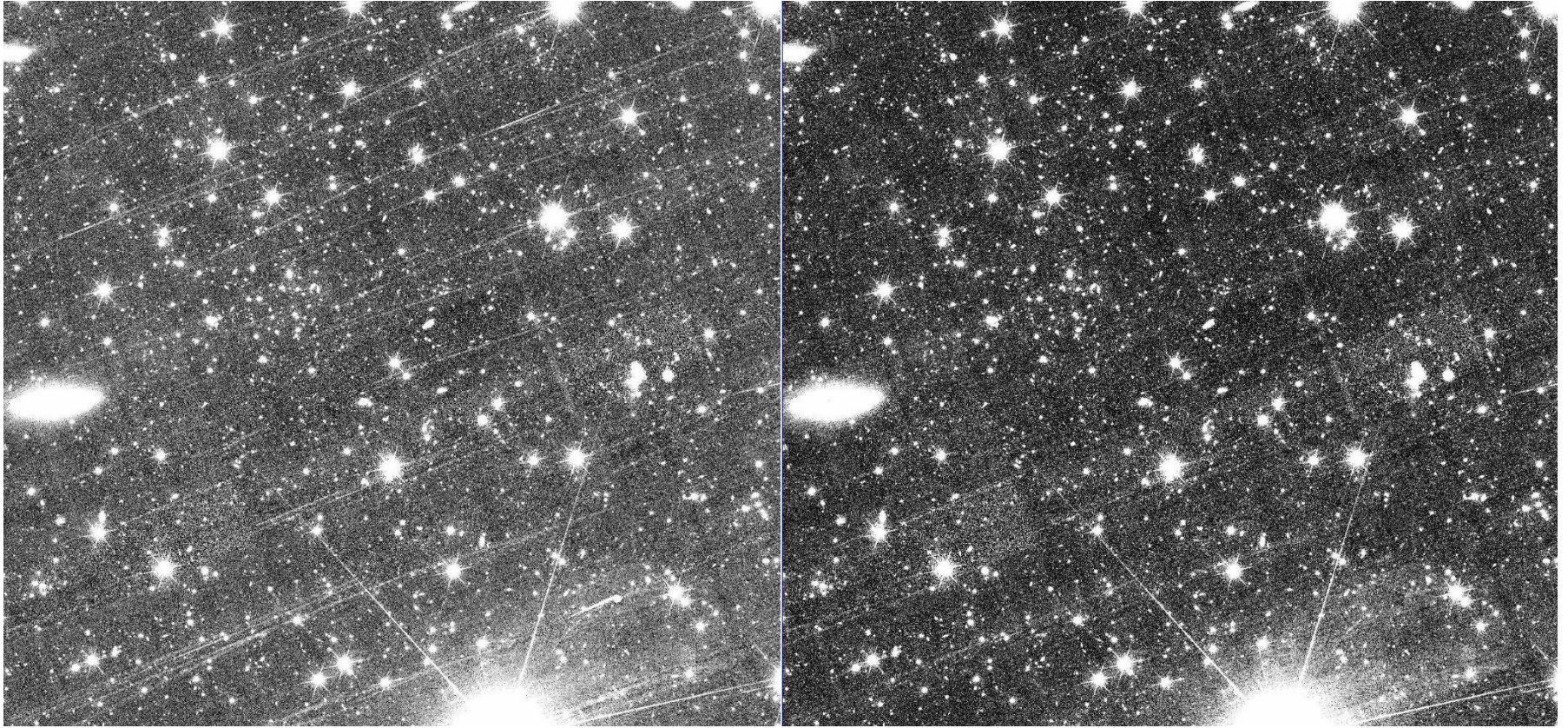


# Amélioration de l'esthétique de l'image par apprentissage



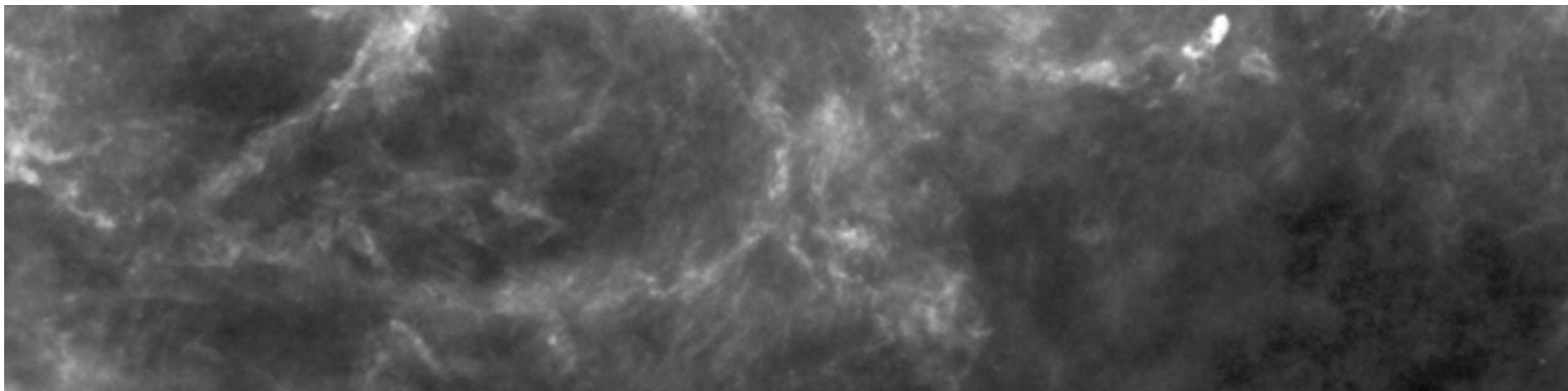
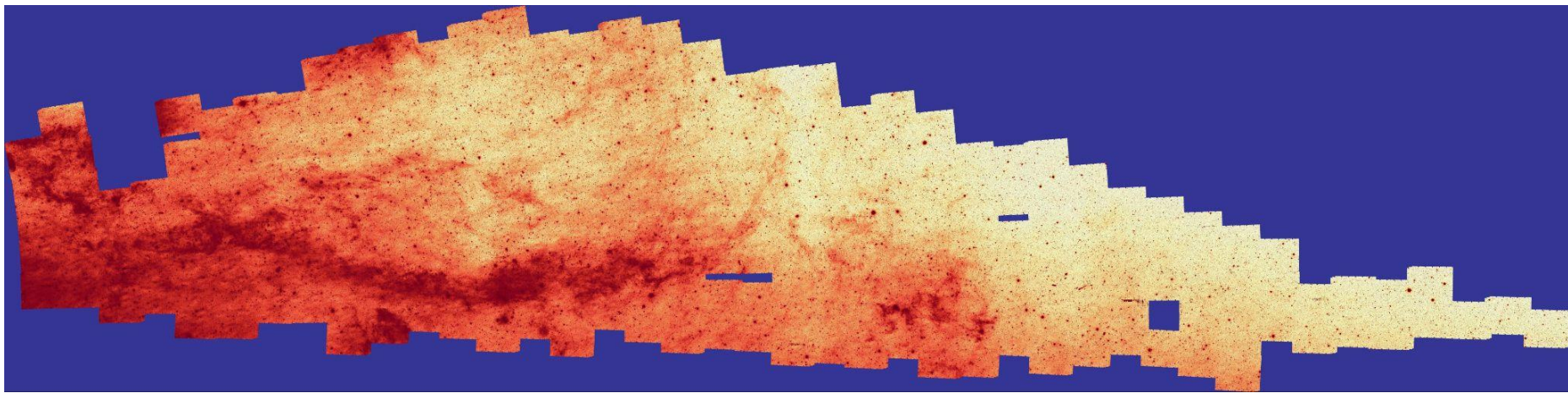
Correction des réflexions parasites dans le VIS: Avant / Après (par E. Bertin, CEA Paris-Saclay)

# Amélioration de l'esthétique de l'image par apprentissage

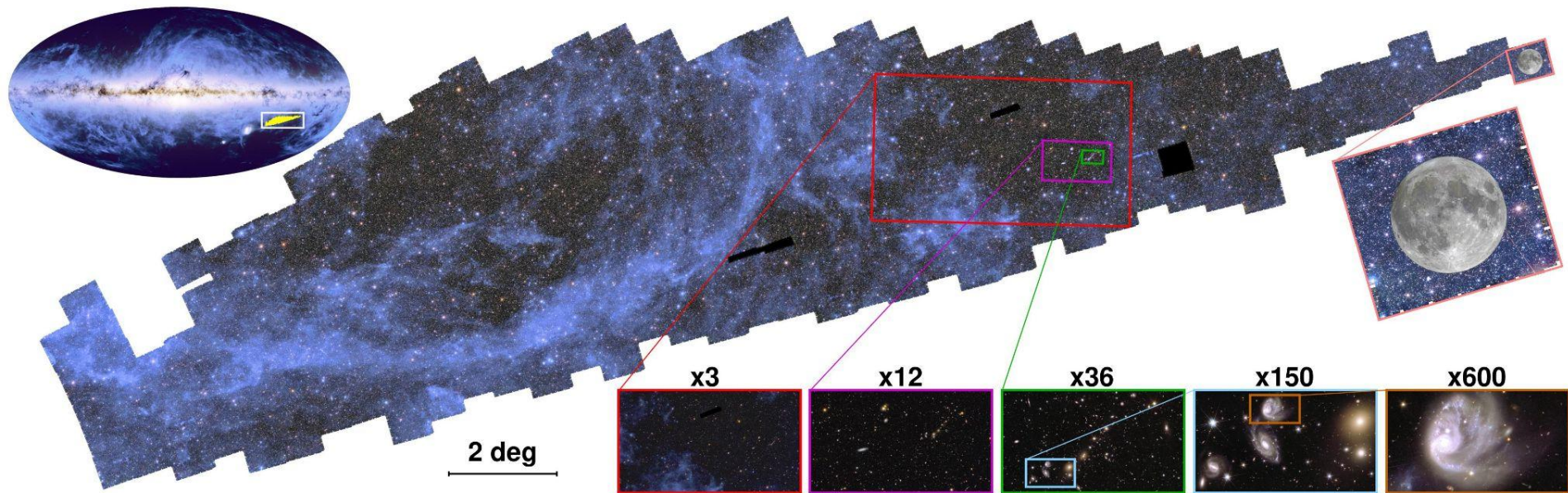


Correction de la rémanence des détecteurs infra-rouge H2RG: Avant / Après (par E. Bertin)

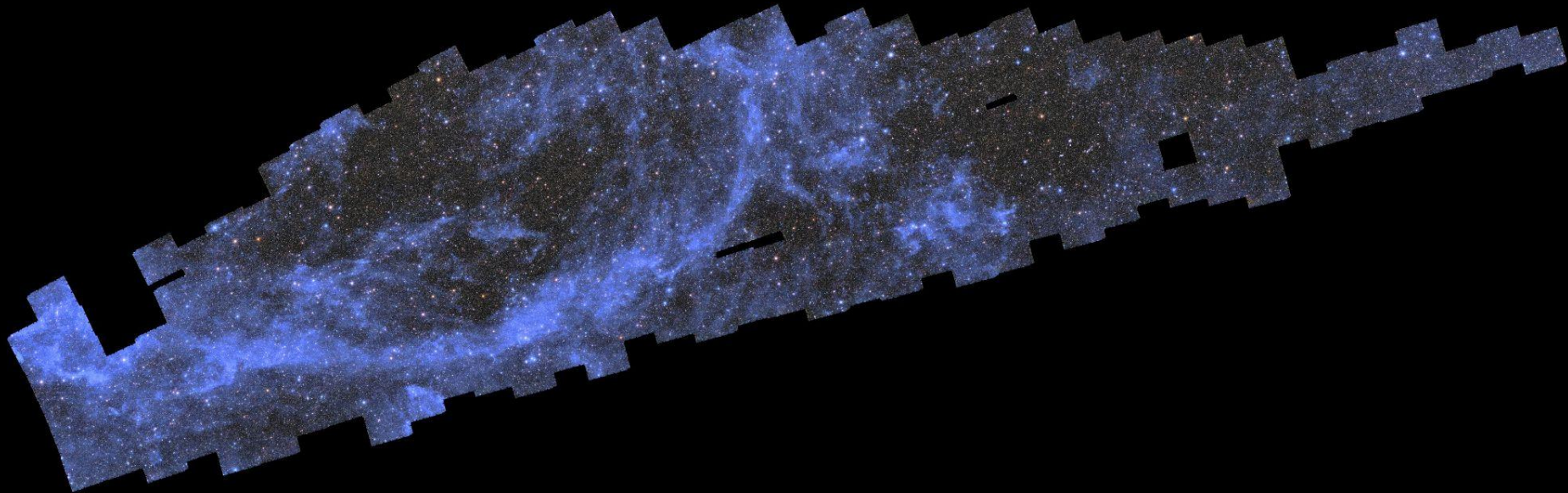
# Cirrus galactiques détectés par Euclid et Planck



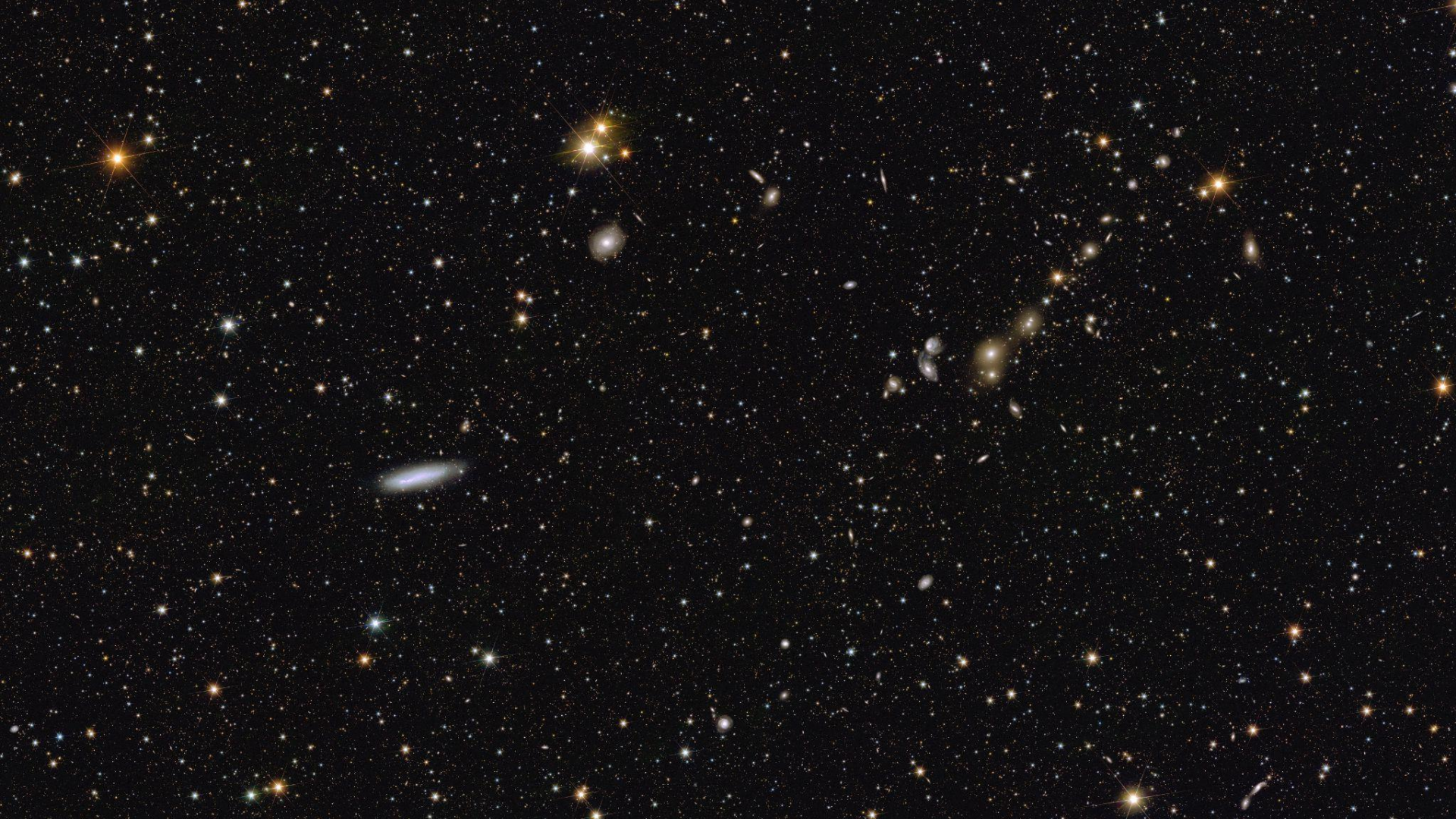
# Plongée dans 208 gigapixels, 1% du grand relevé Euclid



# La première mosaïque de l'atlas du ciel d'Euclid















# Euclid

