



# Nicolas Laporte

## Curriculum Vitae

### Education

- 2009 - 2013 **PhD**, *Paul Sabatier University, Toulouse (France), Astrophysics.*  
PhD thesis: "Search for and study of the first galaxies ( $z > 6$ )" supervised by Dr. Roser Pelló at Institut de Recherche en Astrophysique et Planétologie (IRAP) in Toulouse (France). Awarded in March 2013 with honors
- 2007–2009 **Master**, *Bordeaux I University, Bordeaux(France), Astrophysics and corpuscular physics.*  
Main courses : cosmology, galactic physics, numerical models, stellar physics and planetology. Awarded in June 2009 with honors (rank : 3/10)
- 2004–2007 **Bachelor**, *Blaise Pascal University, Clermont-Ferrand(France), Physics and Chemistry.*  
Main courses : thermodynamic, fluid mechanics, quantum mechanics, statistical physics, nuclear physics, organic chemistry. Awarded in June 2007 with honors

### Honors & Awards

- Nov. 2023 **Trophée des Français de l'Étranger**, awarded by the French Embassy in London for research and outreach activities.
- Oct. 2019 **Kavli Senior Fellowship**, to conduct a research project at the University of Cambridge (Cambridge - UK).
- Jan. 2016 **CONECYT Fellowship**, to conduct a research project at the Pontificia Universidad Católica (Santiago - Chile), declined.
- Dec. 2015 **Lucien Babonneau prize from the Toulouse Academy of Science**, awarded for the organisation of the best outreach event in the South of France.
- Dec. 2013 **Pierre Maury prize from the Toulouse Academy of Science**, awarded for the best thesis in Astronomy and Space Science prepared in the Academy of Toulouse.
- Dec. 2013 **"Prix des Jeunes" from the "Cité de l'Espace" association**, awarded for the best french public outreach event (Astro-jeunes festival) organised by young scientists on Space activities.
- Sept. 2012 **NASA article of the day**, awarded for my first author paper : "The bright-end of the Luminosity Function at  $z \sim 9$  " published in *A&A*, 2012,542, 31L.
- 2009–2012 **Fellowship from the French Ministry of Research.**

### Research Experience

- Since Dec. 2023 **Assistant Astronomer**, *Laboratoire d'Astrophysique de Marseille, Aix-Marseille University (France)*, Main activities : study of old stellar population in the most distant galaxies, search for pop-III stars, study of large scale structure at  $z \geq 6$ , determine the physical properties of the main population of ionising sources in the epoch of reionisation.
- Oct. 2019 - Nov. 2023 **Senior Research Fellow**, *Kavli Institute for Cosmology, University of Cambridge (UK)*, Main activities : search for and study of old stellar population in the most distant galaxies, study of the dust properties at very high-redshift, determine the physical properties of the main population of ionising sources in the epoch of reionisation.

- March 2016 - **Post-doc**, *Astrophysics department*, University College London (UK), Main activities : Search for, photometric and spectroscopic study of the most distant galaxies in the framework of the *Frontier Fields* project, ALMA follow-up in order to constrain their ISM properties and their role in the reionisation era.  
Sept. 2019 under the supervision of Prof. Richard Ellis
- March 2014 - **Post-doc**, *Instituto de Astrofísica*, Pontificia Universidad Católica (CL), Main activities :  
Feb. 2016 Search for and study of the very high-redshift galaxies in the framework of the *Frontier Fields* project, study of the red-sources highlighted in *Herschel* data, study of AGN at high-redshift.  
under the supervision of Prof. Franz E. Bauer
- Feb. 2013 - **Post-doc**, *Instituto de Astrofísica de Canarias (IAC)*, La Laguna (ES), Main activities :  
Feb 2014 search for and study of very massive objects at high- $z$  detected with instruments on board the *Herschel* Space Observatory (ESA), search for Lyman Break galaxies at  $z \geq 4$  using GTC and WHT data, implication in future IR missions (SPICA and ESA L2-L3 mission) .  
under the supervision of Prof. Ismael Perez-Fournon
- Feb. 2013 - **SPIRE ICC member**, *Rutherford Appleton Laboratory (Oxford - UK)*, Main activities :  
Feb 2014 update of the Data Reduction Pipeline of SPIRE, update of HIPE (dedicated software to reduce SPIRE data) and tests of these updates, under the supervision of Dr. Chris Pearson and Prof. Ismael Perez-Fournon.

## Bibliometric data

(from SAO/NASA Astrophysics Data System, ADS)

- Number of ADS "articles" : 117. First paper 2011
- Published or in press articles : 72, with 15 as first author, 14 as second author
- Number of citations: 2767
- **h-index: 29**

## Refereed journal articles

- 2024 **The growth of the gargantuan black holes powering high-redshift quasars and their impact on the formation of early galaxies and protoclusters** , *J. Bennett et al.*, MNRAS, 527, 1033 .
- 2023 **Nebular dominated galaxies in the early Universe with top-heavy stellar initial mass functions** , *A. Cameron et al.*, Nature, submitted .
- 2023 **Unbiased surveys of dust-enshrouded galaxies with ALMA** , *K. Kohno et al.*, ApJ, submitted .
- 2023 **JWST-JADES. Possible Population III signatures at  $z=10.6$  in the halo of GN-z11** , *R. Maiolino et al.*, A&A, submitted .
- 2023 **GN-z11 : The environment of an AGN at  $z=10.603$**  , *J. Scholtz, C. Witten, N. Laporte et al.*, MNRAS, submitted .
- 2023 **Deciphering Lyman- $\alpha$  emission deep into the Epoch of Reionisation** , *Witten, C., Laporte, N, et al.*, Nat. Astronomy, in press .
- 2023 **A small and vigorous black hole in the early Universe** , *R. Maiolino et al.*, Nature, in press .
- 2023 **A variable active galactic nucleus at  $z=2.06$  triply-imaged by the galaxy cluster MACS J0035.4-2015** , *L. Furtak et al.*, MNRAS, 522, 5142 .
- 2023 **ALMA Lensing Cluster Survey : average dust, gas, and star-formation properties of cluster and field galaxies from stacking analysis** , *A. Guerrero et al.*, MNRAS, 526, 2423 .

- 2023 **Nature and Nurture? Comparing Ly- $\alpha$  Detections in UV Bright and Fainter [O III]+H $\beta$  Emitters at  $z \sim 8$  With Keck/MOSFIRE** , *Roberts-Borsani, G., et al.*, *ApJ*, 948, 54 .
- 2023 **Resolving Ambiguities in the Inferred Star Formation Histories of Intense [O III] Emitters in the Reionisation Era** , *Laporte, N et al.*, *MNRAS*, 523, 3018 .
- 2023 **Evidence for a low Lyman Continuum Escape fraction in three Massive, UV-bright galaxies at  $z > 7$**  , *Witten, C., Laporte, N, et al.*, *ApJ*, 944,61 .
- 2022 **A lensed protocluster candidate at  $z=7.66$  identified in JWST observations of the galaxy cluster SMACS0723-7327** , *Laporte, N, et al.*, *A&A Letter*, 667, 3 .
- 2022 **Possible Systematic Rotation in the Mature Stellar Population of a  $z = 9.1$  Galaxy**, *Tokuoka, T., et al.*, *ApJ*, 933, 19 .
- 2022 **XMM-Newton study of six massive, X-ray luminous galaxy cluster systems in the redshift range  $z = 0.25-0.5$** , *Böhringer, H., Chon, G., Ellis, R., Laporte, N. et al.*, *A&A*, 664, 57.
- 2022 **The Prevalence of Galaxy Overdensities Around UV-Luminous Ly- $\alpha$  Emitters in the Epoch of Reionization** , *Leonova, E. et al.*, *MNRAS*, 515, 5790 .
- 2022 **The Nature of High [OIII]88 $\mu\text{m}$ /[CII]158 $\mu\text{m}$  Galaxies in the Epoch of Reionization: Low Carbon Abundance and a Top-Heavy IMF?**, *H. Katz et al.*, *MNRAS*, 510, 5603.
- 2021 **Assessing the sources of reionisation: a spectroscopic case study of a 30 $\times$  lensed galaxy at  $z \sim 5$  with Ly $\alpha$ , C IV, Mg II, and [Ne III]** , *J. Witstok et al.*, *MNRAS*, 508, 1686 .
- 2021 **ALMA Lensing Cluster Survey: a strongly lensed multiply imaged dusty system at  $z \geq 6$** , *N. Laporte, A. Zitrin, R. Ellis et al.*, *MNRAS*, 505, 4838.
- 2021 **ALMA Lensing Cluster Survey: A spectral stacking analysis of [C II] in lensed  $z \sim 6$  galaxies** , *J.B. Jolly, K. Knudsen, N. Laporte*, *A&A*, 652, 128.
- 2021 **Probing Cosmic Dawn : Ages and Star Formation Histories of Candidate  $\geq 9$  galaxies** , *N. Laporte, R. Meyer, R. Ellis et al.*, *MNRAS*, 505, 3336.
- 2021 **ALMA Lensing Cluster Survey: Bright [CII] 158  $\mu\text{m}$  Lines from a Multiply Imaged Sub-L $\star$  Galaxy at  $z = 6.0719$** , *S. Fujimoto, M. Ogura, G. Brammer, N. Laporte et al.*, *MNRAS*, in press.
- 2021 **Double-peaked Lyman- $\alpha$  emission at  $z = 6.803$ : a reionisation-era galaxy self-ionising its local H II bubble** , *R. Meyer, N. Laporte et al.*, *MNRAS*, 500, 558.
- 2020 **MUSE observations towards the lensing cluster A2744: Intersection between the LBG and LAE populations at  $z \sim 3-7$** , *G. de La Vieuville et al.* , *A&A*, 644, 39.
- 2020 **The Mass-Metallicity Relation at  $z=8$ : Direct-Method Metallicity Constraints and Near-Future Prospects** , *T. Jones et al.* , *ApJ*, 903, 150.
- 2020 **The Mean Absorption-line Spectra of a Selection of Luminous  $z \sim 6$  Lyman Break Galaxies**, *Y. Harikane, N. Laporte, et al.* , *ApJ*, 902, 117.
- 2020 **New methods for identifying Lyman continuum leakers and reionization-epoch analogues** , *H. Katz et al.* , *MNRAS*, 498, 164.
- 2020 **Interpreting the Spitzer/IRAC colours of 7  $z \sim 9$  galaxies: distinguishing between line emission and starlight using ALMA** , *G. Roberts-Borsani, R. Ellis & N. Laporte* , *MNRAS*, 497, 3340.
- 2020 **Three Ly $\alpha$  Emitting Galaxies within a Quasar Proximity Zone at  $z \sim 5.8$** , *S. Bosman et al.*, *ApJ*, 896, 49.

- 2020 **The role of galaxies and AGN in reionizing the IGM - III. IGM-galaxy cross-correlations at  $z \sim 6$  from eight quasar fields with DEIMOS and MUSE**, *R. Meyer et al.*, MNRAS, 494,1560.
- 2019 **The faint end of the  $z \sim 3-7$  Luminosity Function of Lyman-alpha emitters behind lensing clusters observed with MUSE**, *G. de La Vieuville et al.*, A&A, 628A, 3.
- 2019 **The Absence of [C II]158 $\mu$ m Emission in Spectroscopically-Confirmed Galaxies at  $z > 8$** , *N. Laporte et al.*, MNRAS, 487, 81.
- 2019 **Fluorescent C II\* 1335Å emission spectroscopically resolved in a galaxy at  $z = 5.754$** , *S. Bosman, N. Laporte et al.*, MNRAS, 487, 67.
- 2019 **Probing 3D structure with a large MUSE mosaic: extending the mass model of Frontier Field Abell 370**, *D. Lagattuta et al.*, MNRAS, 485, 3738.
- 2019 **Probing Cosmic Dawn: Modelling the Assembly History, SEDs, and Dust Content of Selected  $z \sim 9$  Galaxies**, *H. Katz, N. Laporte et al.*, MNRAS, 484, 4054.
- 2018 **The WIRCam Ultra Deep Survey - I. Survey overview and UV luminosity functions at  $z \sim 5$  and  $z \sim 6$** , *R. Pelló, P. Hudelot, N. Laporte et al.*, A&A, 620, 51.
- 2018 **The ALMA Frontier Fields Survey - IV. Lensing-corrected 1.1 mm number counts in Abell 2744, MACSJ0416.1-2403 and MACSJ1149.5+2223**, *A. Muñoz Arancibia et al.*, A&A, 620, 125.
- 2018 **The onset of star formation 250 million years after the Big-Bang**, *T. Hashimoto, N. Laporte et al.*, Nature, 557, 392.
- 2018 **The role of galaxies and AGN in reionizing the IGM - I. Keck spectroscopy of  $5 < z < 7$  galaxies in the QSO field J1148+5251**, *K. Kakiichi, R. Ellis, N. Laporte et al.*, MNRAS, 479, 43.
- 2018 **Spectroscopic constraints on UV metal line emission at  $z \sim 6-9$ : the nature of Ly $\alpha$  emitting galaxies in the reionization era**, *R. Mainali et al.*, MNRAS, 479, 1180.
- 2017 **A spectroscopic search for AGN activity in the reionization era**, *N. Laporte et al.*, ApJ, 851, 40.
- 2017 **The ALMA Frontier Fields Survey III: 1.1 mm Emission Line Identifications in Abell 2744, MACSJ0416.1-2403, MACSJ1149.5+2223, Abell 370, and Abell S1063**, *González-López et al.*, A&A, 608, 138.
- 2017 **Multiwavelength Characterization of an ACT-selected, Lensed Dusty Star-forming Galaxy at  $z = 2.64$** , *G. Roberts-Borsani et al.*, A&A, 844, 110.
- 2017 **The ALMA Frontier Fields Survey. II. Multiwavelength Photometric analysis of 1.1mm continuum sources in Abell 2744, MACSJ0416.1-2403 and MACSJ1149.5+2223**, *N. Laporte et al.*, A&A, 604,132.
- 2017 **Dust in the Reionization Era: ALMA Observations of a  $z = 8.38$  Gravitationally Lensed Galaxy**, *N. Laporte et al.*, ApJ, 837L,21.
- 2016 **The ALMA Frontier Fields Survey. I. 1.1 mm continuum detections in Abell 2744, MACS J0416.1-2403 and MACS J1149.5+2223**, *J. González-López et al.*, A&A, 597A, 41.
- 2016 **Young Galaxy Candidates in the Hubble Frontier Fields. III. MACS J0717.5+3745**, *N. Laporte et al.*, ApJ, 820, 98.
- 2015 **Young Galaxy Candidates in the Hubble Frontier Fields. II. MACS J0416-2403**, *L. infante, W. Zheng, N. Laporte et al.*, ApJ, 815, 18.
- 2015 **Environment of the Submillimeter-bright Massive Starburst HFLS3 at  $z = 6.34$** , *N. Laporte et al.*, ApJ, 810, 130.

- 2015 **Frontier Fields : Combining *HST*, *VLT* and *Spitzer* data to explore the  $z \sim 8$  Universe behind the lensing cluster MACS0416–1830**, *N. Laporte et al.*, *A&A*, 575A, 92.
- 2014 **Imaging the environment of a  $z = 6.3$  submillimeter galaxy with SCUBA-2**, *E.I. Robson et al.*, *ApJ*, 793, 11.
- 2014 **Probing the  $z > 6$  Universe with the first Hubble Frontier Fields cluster Abell 2744**, *H. Atek et al.*, *ApJ*, 789, 96.
- 2014 **HerMES: The Rest-Frame UV Emission and A Lensing Model for the  $z = 6.34$  Luminous Dusty Starburst Galaxy HFLS3**, *A. Cooray et al.*, *ApJ*, 790, 40.
- 2014 **The first Frontier Fields cluster:  $4.5 \mu\text{m}$  excess in a  $z \sim 8$  galaxy candidate in Abell 2744**, *N. Laporte et al.*, *A&A*, 562L, 8.
- 2014 **HerMES: Candidate High-redshift Galaxies Discovered with Herschel/SPIRE**, *Dowell, C. et al.*, *ApJ*, 780, 75.
- 2013 **Gravitational Lens Models Based on Submillimeter Array Imaging of Herschel-selected Strongly Lensed Sub-millimeter Galaxies at  $z > 1.5$** , *R.S. Bussman et al.*, *ApJ*, .779,25.
- 2013 **SPIRE Point Source Photometry : within the Herschel Interactive Processing Environment (HIPE)**, *C: Pearson et al.*, *ExA*, 37, 175.
- 2012 **A peculiar galaxy appears at redshift 11 : properties of a moderate redshift interlopers**, *M. Hayes, N. Laporte et al.*, *MNRAS*, 425, 19.
- 2012 **The bright-end of the Luminosity Function at  $z \sim 9$** , *N. Laporte et al.*, *A&A*, 2012, 542, 31L, **NASA "Article of the day" le 21 Septembre 2012.**
- 2011 **Far-infrared constraints on the contamination by dust obscured galaxies of high- $z$  dropout searches**, *F. Boone et al.*, *A&A*, 534, 124.
- 2011 **Optical dropout galaxies lensed by the cluster A2667**, *N. Laporte et al.*, *A&A*, 531, 74.

## Teaching and Supervision Experience

- Since 2022 **Lecturer for the "Large Scale Structure Formation" course**, *University of Cambridge*, part III students.
- Since Oct. 2021 **Supervision of a PhD student**, *Callum Witten (University of Cambridge)*, Stacking all  $z \geq 8$  galaxies spectra obtained with ground-based telescopes.
- Jul. 2021 – Aug. 2022 **Supervision of a Summer student**, *Marc Vina-Bertran (Cardiff University)*, Estimating the proportion of  $z \geq 8$  galaxies with an already evolved stellar population.
- Jul. 2020 – Aug. 2020 **Supervision of two Summer students**, *Nora Drewes (Leicester University) and Callum Donnan (St Andrews University)*, Developing a stacking method to analyse deep spectra of high- $z$  galaxies.
- Mar. 2020 – Jun. 2020 **Supervision of a Master student**, *Jules Mathieu (Clermont Auvergne University)*, Search for AGN candidates in lensed fields.
- Nov. 2018 – Jun. 2019 **Supervision of a Master student**, *Kiana Kade (University College London)*, Search for very high redshift objects in the BUFFALO survey.
- Sep. 2018– Sept. 2019 **Responsible for the Diploma Club**, *Evening courses at the University College London*, 2.5hrs every month.
- Apr. – Jul 2018 **Supervision of a Master student**, *Thomas Privat de Fressenel (Paris 6 University)*, Search for very high redshift objects in the last Hubble flagship program RELICS.
- Oct. 2016 - Sept. 2019 **Co-supervision of two PhD students**, *Thomas Fletcher and Romain Meyer (UCL)*, photometric redshift and spectroscopic data reduction and analysis.

- Jun. 2016 **Invited Lecturer**, *Claude Bernard University (Lyon)*, Lecture on NIR spectroscopy in Astronomy .
- Feb.–May 2012 **Supervision of Master students**, *1<sup>st</sup> year internship on extragalactic physics*, Title : Evolution of the luminosity function at high-redshift using HUDF data.
- Nov. 2009 - June 2012 **Lecturer at Paul Sabatier University**, *Courses for the 1<sup>st</sup> and 2<sup>nd</sup> year students*, Courses in thermodynamic and fluid mechanics, practical exercises and laboratory in fluid mechanics and thermodynamics, 64h/year.  
Person in charge: Myriam Carcasses, reference available on request
- 2007–2008 **Physics tutor** , for *1<sup>st</sup> year students at Bordeaux University*, 38h.  
Person in charge: Dean Lewis, reference available on request
- 2006–2007 **Computer tutor** , for *1<sup>st</sup> year students at Blaise Pascal University (Clermont-Ferrand)*, 24h.  
Person in charge: Vincent They, reference available on request

## Funding

- 2020 **Kavli Institute for Cosmology, Cambridge**, 2750.55£, to buy a 3D printer to develop activities for visually impaired kids.
- 2018 **Auvergne-Rhône Alpes region**, 12,000€, to organise an outreach event near Clermont-Ferrand on Astronomy and Space topics [www.astrauvergne.com] .
- 2017-2019 **ECOS-Sud as co-II [PIs: Franz Bauer, Roser Pelló]**, ≈60,000€, to fund missions in Chile (for European researchers) and in France (for chilean researchers).
- 2015-2018 **CONICYT Fellowship**, 25,740,000 CLP (≈33,000€), to pursue a 3-years research project on the first galaxies at PUC (Chile) - declined to take a position at UCL (London, UK).
- 2014 **SF2A Conference Grant**, 1500€, to attend the annual meeting of the French Astronomical Society.

## Professional service

- 2021 **"First light galaxies and reionisation" Science Working Group coordinator**, for the *MOSAIC/ELT consortium*.
- 2021 **member**, *EUCLID consortium*.
- 2020 **member**, *MOONS consortium*.
- 2021 **SOC member**, of the *"Charting the metallicity evolution history of the Universe" conference*.
- 2020 **Chair**, of the *"First galaxies" session at the EAS 2020 meeting*.
- 2019 **Co-Chair**, of the *"First galaxies" session at the EWASS 2019 meeting*.
- 2018 **Volunteer Reviewer**, for the *ESO Allocation Time committee*.
- 2017 **Co-Chair**, of the *"First galaxies" session at the RAS meeting*.
- 2016 **Reviewer**, for the *Gemini Telescope Allocation Time committee*.
- Since 2012 **Referee**, for *ApJ, MNRAS and A&A*.

## Data reduction & Observational skills

Since Feb. **PI & Co-I of several projects on ground-based telescopes :**

- 2011
- "X-Shooter Spectroscopy for the Most Luminous Galaxy Candidate at  $z \sim 10$ " - Observations on going with XShooter/VLT (ID: 112.25FE.001, PI: N. Laporte)
  - "The properties of galaxies residing within an ionised bubble and protocluster at  $z \sim 7$ " - Observations on going with KMOS/VLT (ID: 112.25RJ.001, PI:C. Witten)
  - "The Ionisation Sources of the First Galaxies with X-shooter" - Observations on going with XShooter/VLT (ID: 112.24RC.001, PI: F. D'Eugenio)
  - "The properties of a protocluster candidate observed  $\sim 700$ Myr after the Big-Bang" - Observations on going with KMOS/VLT (ID: 111.24P6.001, PI: N. Laporte)
  - "Probing "Cosmic Dawn" : The physical properties of a  $z=8.78$  galaxy" - Observations done, data reduction on-going (ID: P375633, PI: N. Laporte)
  - "Can luminous  $z > 6$  galaxies self-ionise their own bubbles ?" - Observations on-going with MEGARA/GTC (ID: GTC17-20B, PI: J. Gallego)
  - "Searching for Cosmic Dawn: Age-Dating an Unlensed  $z > 9$  Galaxy" - Observations done with X-Shooter/VLT, paper in preparation (ID: 106.20ZH.001, PI : R. Ellis)
  - "Do faint galaxies drive early Reionization at  $z \sim 8$ ? MOSFIRE spectroscopy of high EW Ly $\alpha$ " - Observations on-going with MOSFIRE/Keck (ID : U069, PI : T. Treu)
  - "Probing Cosmic Dawn: Estimating the Stellar Ages of  $z \sim 9$  Galaxies" - Observations done with X-Shooter/VLT, paper in preparation (ID: 0104.A-0028(A), PI : R. Ellis)
  - "Searching for Cosmic Dawn: Age-Dating an Unlensed  $z > 9$  Galaxy" - Observation done with FLAMINGOS2/ Gemini-South, paper in preparation (ID: GS-2020A-FT-102, PI: G. Roberts-Borsani)
  - "Unveiling the dust properties of  $z \geq 8$  galaxies" - Observations will be done in Cycle 7 (2019.A.00343.S , PI: N. Laporte)
  - "Probing Cosmic Dawn: Estimating the Stellar Ages of  $z \sim 9$  Galaxies" - Observations will be done in Cycle 7 (2019.A.00035.S , PI: R. Ellis)
  - "Do first galaxies form earlier : a new way to probe Cosmic Dawn" - Observations done, paper in preparation (ID : U128 , PI : B. Robertson)
  - "A New Route to Determining the Escape Fraction of Ionising Photons from Sub-Luminous Star-Forming Galaxies at the End of Cosmic Reionisation", *on-going observation with MUSE* (0103.A-0140(A) , PI: R.Ellis)
  - "Unveiling the ISM properties of a mature spectroscopically-confirmed lensed galaxy at  $z=9.1$ ", **DDT** - *Observations done with ALMA in Cycle 6* (2018.A.00004.S , PI: N. Laporte)
  - "Constraining the dust properties and radiation field in a lensed  $z=8.38$  galaxy" *Observations done with ALMA in Cycle 6.* (2018.1.01332.S, PI: N. Laporte)
  - "Anatomy of a spectroscopically-confirmed lensed galaxy at  $z=9.11$ " *Observations done with ALMA in Cycle 6.* (2018.1.00616.S, PI: T. Hashimoto)
  - "Unveiling the ISM properties of a mature spectroscopically-confirmed lensed galaxy at  $z=9.1$ ", **DDT** - *Observations will be done in Cycle 5* (2017.A.00026.S , PI: N. Laporte)
  - "Dust in the Reionisation Era: A New Probe of the Birth of Galaxies" *Observations on-going with ALMA in Cycle 5.* (2017.1.00486.S, PI: R.Ellis)
  - "[CII]158 $\mu$ m observation in a spectroscopically confirmed galaxy at  $z = 8.38$ ", *Observations done with ALMA in Cycle 5. Data analysis on-going* (2017.1.00697.S, PI: N. Laporte)
  - "The Role of Early Galaxies in Cosmic Reionisation : New Insights from the *HST* Frontier Fields" *Observations done. Data reduction and analysis on-going* (0100.A-0664, PI : N. Laporte)
  - "The Role of Luminous Galaxies in Concluding Cosmic Reionization" *Observations done in visitor mode with X-Shooter/VLT. paper in preparation* (099.A-0128, PI: R. Ellis)
  - "Dust Production in the Reionisation Era: Spectroscopic Confirmation of a  $z \simeq 8$  ALMA Continuum Detection" *Results published in Laporte et al. 2017a* (298.A-5012, PI: R. Ellis)
  - "Spectroscopic Studies of MACS1149+2223 JD1: The Role of Early Luminous Galaxies in Cosmic Reionisation" *Results published in Nature - Hashimoto, Laporte et al. 2018* (098.A-0534, PI : N. Laporte)
  - "Unveiling the properties of a spectroscopically confirmed galaxy at the frontiers of the Universe". *Results published in Laporte et al. 2017a* (2015.1.00594.S, PI : N. Laporte)



- "The brightest  $z \sim 8$  object revealed by X-Shooter". *Observations not finished at the end of the observing period* (096.A-0522, PI : [N. Laporte](#))
  - " The first Frontier Field cluster : X-Shooter follow-up of the brightest  $z \sim 8$  LBGs behind Abell 2744 ". *No detection - results published in a more general paper* (095.A-0287, PI : [N. Laporte](#))
  - " Galaxies at the end of the reionization epoch : probing the faintest Universe at  $z \sim 5$  using MOS/OSIRIS " *Observations to be carry out with OSIRIS/GTC.* (131-GTC80/15B, PI : A. Streblyanska)
  - " Dissection of a Lensing Cluster. A Deep Muse Exposure of the Hubble Frontier Field MACS0416.1-2403" . *Observations carried out with MUSEVLT.* (P94, PI : F. Bauer)
  - " Follow-up spectroscopy of selected, strongly lensed Herschel sources " . *Observations carried out with X-ShooterVLT.* (P88, PI : M. Dessauges-Zavadsky)
  - " Unveiling nature and properties of optical dropouts found behind the lensing cluster A2667 " . *Observations carried out with X-Shooter@VLT* ( 087.A-0118, PI : [N. Laporte](#))
- 2022 **JWST- Cycle 1 :**
- "PRIMER: Public Release IMaging for Extragalactic Research" *Project aiming to search for and study  $z \geq 9$  galaxies* (ID : 1837, PI : J. Dunlop)
  - "Anchoring  $z > 6$  Galaxy Metallicities using  $T_e$  and  $n_e$  Diagnostics Enabled by JWST and ALMA Spectroscopy" *Project aiming to measure the metallicity of  $z \geq 6$  galaxies* (ID : 1657, PI: Harikane)
  - "Early Galaxy Assembly Uncovered with ALMA and JWST: A Remarkably UV and [CII] Bright, Strongly Lensed Sub-L\* Galaxy at  $z=6.072$ " *Spectroscopic follow-up of a strongly lensed  $z \geq 6$  galaxies identified in Laporte et al. (2021)* (ID : 1567, PI: Fujimoto)
- 2023 **JWST- Cycle 2 :**
- "NIRSpec Spectroscopy of a Remarkably Luminous Galaxy at  $z=10.19$ " *Project aiming to study ALMA spectroscopy confirmed galaxies at  $z \geq 10$*  (ID : 2792, PI : Y. Harikane)
  - "The search for Population III stars in low-metallicity galaxies" *Project aiming to detect pop-III stars in the halo of bright galaxies* (ID : 2957, PI: Uebler)
  - "Resolving early galaxy disks at  $z \geq 8$  with NIRSpec-IFS" *Study of ISM properties of  $z \geq 8$  spectroscopically confirmed galaxies* (ID : 2959, PI: Scholtz)
  - "A complete spectroscopic census of the faintest galaxies and AGN at the dawn of galaxy formation" *Spectroscopic follow-up of variable sources in the UDF* (ID : 3290, PI: Hayes)
  - "Characterizing the Sources of Ionizing Photons in the Epoch of Reionization" *Spectroscopic follow-up of Lyman leakers sources* (ID : 3767, PI: Meyer)
  - "Unveiling the build-up of large scale structure in the early Universe" *Spectroscopic follow-up of a protocluster candidate at  $z \geq 7.5$  - from Laporte et al. (2022)* (ID : 4043, PI: Witten)
  - "IFU Trio of ALMA, MUSE, JWST: Revealing Dynamical Interplay of Inflow/Outflow at  $z = 6$  with Strong Lensing Aid" *Spectroscopic follow-up of a dusty galaxies at  $z \geq 6$*  (ID : 4573, PI: Fujimoto)
- Feb. 2021 **4 observing nights at the GTC, using MEGARA**, remote observations of double peak Lyman-alpha emitters.
- Feb. & Aug. 2017 **8 observing nights at the VLT, using X-Shooter**, spectroscopic follow-up of high- $z$  sources.
- Mar. 2017 & Mar. 2019 **5 observing nights at the Keck observatory, using DEIMOS, MOSFIRE**, spectroscopic follow-up of high- $z$  galaxies.
- Oct. 2014 **10 observing nights at Las Campanas Observatory, using MMIRS Clay (6.5m)**, spectroscopic observations of very high- $z$  sources selected behind the first Frontier Fields cluster, CNTAC Proposal - PI : F. E: Bauer.
- July 2014 **One week observations at APEX, using LABOCA and SHeFI** , observations of Herschel high- $z$  sub-mm sources, ID: C-094-F-0014 - PI : S. Kim.



- May 2013 **Observations at the Roque de Los Muchachos Observatory.**
- *Gran Telescopio Canarias*(GTC) : using the two observing modes of OSIRIS (imaging and spectroscopy) in order to measure/constrain the redshift of red sources detected with SPIRE (PI : Ismael Perez-Fournon)
  - *William Herschel Telescope*(WHT) : using LIRIS in imaging mode to search for evidences of an overdensity region around a very massive object and to improve the photometric redshift of several Lyman Break Galaxies (DDT awarded to Ismael Perez-Fournon).
- 2010 - 2012 **Member of service observers' team, Bernard Lyot Telescope (2m) at Pic du Midi Observatory (France).**
- Dec. 2010 **Responsible for one week observations, with MAMBO at the IRAM 30m antenna, Pico Veleta, (281-10, PI: F. Boone).**
- Data reduction **X-Shooter, HAWKI, MUSE@VLT, OSIRIS@GTC, ACAM@WHT, MMIRS@Magellan and SPIRE@Herschel.**

#### Summary of observationnal skills

- Number of PI proposals : 14 (first in 2012)
- Number of co-I proposals : 31
- Number of nights at a telescope : 109 nights
- Expertise in observation, data reduction and analysis on : X-Shooter, MUSE, ALMA, NOEMA, MOSFIRE, DEIMOS, Flamingos-2, WFC3, ACS, EMIR, OSIRIS, MEGARA, NIRSpec, NIRCам, NIRISS

#### International Schools Attended

- Nov. 2014 **Advanced School on X-Ray Astrophysics, Data analysis of the XMM-Newton, Chandra and Suzaku missions .**
- Sep. 2012 **11<sup>th</sup> school of cosmology, Title : Gravitational lensing : their impact in the study of galaxies and cosmology.**
- Sep. 2010 **IMPRS Summer School, Title : First Stars and Cosmic Reionization.**
- Jan. 2010 **The European Virtual Observatory School , 4 days devoted to VO tools, including practical exercises..**

#### Colloquia and seminars

- 17/10/2023 **KICC Introductory event (Cambridge - UK), New insights from the JWST on the first structure of the Universe.**
- 08/09/2023 **First structure(Paris - France), The first protoclusters observed with JWST.**
- 10/07/2023 **SESTO Summer conference (Sexten - Italy), Resolving Ambiguities in the Inferred Star Formation Histories of Intense [O III] Emitters in the Reionisation Era.**
- 06/07/2023 **GECO conference (Marseille - France), New insights from the James Webb Space Telescope on the first galaxies.**
- 29/06/2023 **Royal Astronomical Society (London - UK), New insights from the James Webb Space Telescope on the first galaxies.**
- 26/06/2023 **Lancaster University (Lancaster - UK), The quest for Cosmic Dawn : new insights from the JWST.**
- 05/06/2023 **Richard Ellis' 70th birthday conference (London - UK), The quest for Cosmic Dawn.**

- 02/06/2023 **Paul Sabatier University (Toulouse - France)**, *The quest for Cosmic Dawn : first results from the JWST.*
- 28/03/2023 **University of Kyoto (Kyoto - Japan)**, *Invited Talk The quest for Cosmic Dawn : first results from the JWST.*
- 20/03/2023 **Institute of Astronomy (Cambridge - UK)**, *Do we expect to find  $z \geq 12$  galaxies ? Study of the stellar population of very high-redshift galaxies .*
- 09/12/2022 **Institute of Astronomy (Cambridge - UK)**, *Invited Talk An updated view on first galaxies properties after the first JWST observations.*
- 02/12/2022 **Laboratoire d'Astrophysique de Marseille (Marseille - France)**, *Invited Talk New insights on the properties of the first generation of galaxies.*
- 19/09/2022 **Kavli Symposium 2022 (Cambridge - UK)**, *Invited Talk New insights on the first galaxies with the JWST.*
- 29/06/2022 **EAS 2022 (Valencia - Spain)**, *Invited Talk: The properties of the first galaxies.*
- 19/07/2021 **NAM 2021 (online)**, *Observing the first galaxies to probe Cosmic Dawn.*
- 29/06/2021 **EAS 2021 (online)**, *Probing Cosmic Dawn with observations of the first galaxies.*
- 16/06/2021 **SAZERAC (online)**, *The first galaxies at Cosmic Dawn.*
- 16/12/2020 **Geneva Observatory (Switzerland)**, *Invited talk : Observing the first galaxies to probe Cosmic Dawn.*
- 30/06/2020 **EAS 2020 (Leiden - Netherlands)**, *Invited talk : Probing Cosmic Dawn with current and Future facilities.*
- 29/05/2020 **Kavli Seminar (Cambridge - UK)**, *Invited talk : Probing Cosmic Dawn with the most distant galaxies.*
- 05/03/2020 **First Stars VI (Concepcion - Chile)**, *Invited talk : Probing Cosmic Dawn with Current and Future Facilities.*
- 29/10/2019 **Spectroscopy with the JWST (Leiden)**, *Invited talk : The ISM of  $z > 8$  galaxies.*
- 22/10/2019 **First Galaxies and First Structures (Paris)**, *Invited talk : An ALMA view of the first galaxies.*
- 18/09/2019 **10<sup>th</sup> anniversary of the Kavli Institute (Cambridge)**, *Talk : The role of AGN during the Epoch of Reionisation.*
- 11/09/2019 **Extremely Big Eyes on the Early Universe (Rome)**, *Talk : Probing Cosmic Dawn : measuring the age of the most distant galaxies.*
- 11/04/2019 **DTU-Space (Cosmic DAWN Center)**, *Seminar : The first galaxies as a probe of Cosmic Dawn.*
- 27/11/2018 **Laboratoire d'Astrophysique de Marseille (Marseille - France)**, *Seminar : The Galaxies at the Frontiers of the Universe.*
- 21/11/2018 **Ben Gurion University (Beer Sheva - Israel)**, *Seminar : The Galaxies at the Frontiers of the Universe.*
- 19/06/2018 **Rise & Shine conference (Strasbourg)**, *Talk : A synergy between HST, Spitzer, the VLT and ALMA to explore the Epoch of Reionisation.*
- 07/06/2018 **RAS Cosmology Meeting (London)**, *Invited Talk : The onset of star formation 250 million years after the Big-Bang.*
- 02/05/2018 **The Interstellar Medium of High-Redshift Galaxy (MIAPP - Garching)**, *Talk : The role of old stars and AGN during the Epoch of Reionisation.*
- 05/04/2018 **European Week of Astronomy and Space Science (Liverpool)**, *Talk : A synergy between HST, Spitzer, the VLT and ALMA to explore the Epoch of Reionisation.*

- 05/04/2018 **European Week of Astronomy and Space Science (Liverpool)**, *Talk : The VLT and ALMA probe a highly magnified object deep into the Epoch of Reionisation.*
- 14/12/2017 **Distant galaxies from the far South (Bariloche)**, *Invited Review: Combining NIR and ALMA spectroscopy to search for the most distant galaxies.*
- 25/10/2017 **Spectroscopy with the JWST (Leiden)**, *Talk: A search for AGN in the epoch of reionisation.*
- 17/10/2017 **MOSAIC Workshop (Toledo)**, *Talk: A search for AGN in the epoch of reionisation.*
- 05/09/2017 **ESO seminar (Santiago)**, *The first galaxies observed by the VLT and ALMA.*
- 26/06/2017 **European Week of Astronomy and Space Science (Prague)**, *Talk : Dust in the reionisation Era.*
- 27/04/2017 **Mullard Space Science Laboratory seminar**, *Spying the first galaxies in the epoch of reionization.*
- 03/11/2016 **Sussex University seminar**, *Unveiling the properties of the first galaxies .*
- 21/07/2016 **High-redshift workshop (Malte)**, *Présentation : Taking advantage of gravitational lensing to unveil the properties of the reionizing sources.*
- 07/07/2016 **European Week of Astronomy and Space Science (Athens)**, *Talk : Taking advantage of gravitational lensing to unveil the properties of the reionizing sources.*
- 29/06/2016 **Royal Astronomical Society meeting (Nottingham)**, *Talk : Taking advantage of gravitational lensing to unveil the properties of the reionizing sources..*
- 15/06/2016 **French Astronomical Society meeting (Lyon)**, *Talk : Photometric and Spectroscopic analysis of lensed re-ionising sources.*
- 06/26/2015 **European Week of Astronomy and Space Science (Tenerife, Spain)**, *Talk : Up to the Frontier of the Universe: the first galaxies detected by the most powerful telescopes..*
- 06/02/2015 **Week of the French Astronomy Society (Toulouse, France)**, *Talk : Preparing JWST observations at the frontiers of the Universe.*
- 06/02/2015 **Week of the French Astronomy Society (Toulouse, France)**, *Poster : The environment of the most massive starburst in the early Universe, **Best poster prize.***
- 03/27/2015 **CRAL Seminar (Lyon, France)**, *Talk : Combining the largest telescopes to explore the Frontier of the Universe.*
- 12/18/2014 **Chilean Astronomy Workshop**, *Talk : Exploring the Frontier of the Universe with Hubble and Spitzer.*
- 11/12/2014 **Yale Frontier Fields Workshop (U.S.)**, *Talk : Combining HST, Spitzer, VLT, ALMA and Magellan data to explore the boundaries of the Universe.*
- 06/06/2014 **Week of the French Astronomy Society (Paris, France)**, *Talk : The first HST Frontier Fields cluster : search for  $z > 7.5$  galaxies.*
- 02/13/2014 **Breaking News Seminar at the IAC (Spain)**, *Talk : The first result from the HST Frontier Fields project.*
- 03/19/2012 **Seminar at the IAC (Spain)**, *Talk : The evolution of galaxies during the first billion years of our Universe.*
- 12/12/2012 **Seminar at the ISDC at Geneva (Switzerland)**, *Talk : The evolution of galaxies during the epoch of reionization.*
- 10/29/2012 **Lunch talk at Leiden Observatory (Netherlands)**, *Talk : Exploring the epoch of reionization through the study of the first galaxies.*
- Sep. 2012 **11<sup>th</sup> school of cosmology (Cargese)**, *Poster : Looking for high-redshift galaxies ( $z > 6.5$ ) behind the cluster A2667.*

- 07/05/2012 **European Week of Astronomy and Space Science (Rome)**, *Talk : A deep survey behind the lensing cluster A2667: Constraining the luminosity function at  $z \sim 9$ .*
- 07/02/ 2012 **European Week of Astronomy and Space Science (Rome)**, *Talk : Exploring the evolution of the UV LF from  $z \sim 5-9$  with the Wircam Ultra Deep Survey.*
- 02/07/2012 **IRAP Group seminar (Toulouse)**, *Talk : Evolution of the galaxy luminosity function during the first billion years of our Universe.*
- Jul. 2011 **New Horizons for High-Redshift (Cambridge)**, *Poster : Looking for high- $z$  galaxies ( $z > 6.5$ ) behind the lensing cluster A2667. Constraining the UV Luminosity Function at  $z \sim 7,8$  and 9.*
- Jun. 2011 **Meeting of the French Astronomy Society (Paris)**, *Poster : High- $z$  galaxies lensed by the lensing cluster A2667.*
- Jan. 2011 **REGALDIS Workshop**, *Talk : Looking for high redshift galaxies around the lensing cluster A2667.*
- Nov. 2010 **IRAP Group Seminar**, *Talk : Search for and study of the first galaxies.*

## Press Releases

- June 2021 **RAS / University of Cambridge / UCL**, *New observations of the most distant galaxies close in on cosmic dawn*, Related to the paper : Laporte et al. 2021, MNRAS, 505, 3336.
- May 2018 **Nature / ALMA / ESO**, *ALMA and VLT Find Evidence for Stars Forming Just 250 Million Years After Big Bang*, Related to the paper : Hashimoto, Laporte et al. 2018, Nature, 557, 392.
- Mar. 2017 **ESO/ALMA/HST**, *ALMA and Hubble Space Telescope views of the distant dusty galaxy A2744\_YD4*, Related to the paper : Laporte et al. 2017, ApJ, 837, 21.
- Feb. 2014 **NASA/HST/JPL**, *Hubble and Spitzer Space Telescopes Find One of the Youngest Galaxies in the Universe*, Related to the paper : Laporte et al. 2014, A&A, 562L, 8L, Ref: STScI-2014-17.
- Feb. 2014 **IAC/IRAP/CRAL/EPFL/Observatoire de Genève**, *Hubble and Spitzer space telescopes "spy" one of the youngest galaxies in the Universe*, Related to the paper : Laporte et al. 2014, A&A, 562L, 8L.

## Popularization of Science

- Since 2020 **Responsible for an ESA interactive exhibition**, *Pictures of the Earth taken by ESA astronaut Thomas Pesquet*, This exhibition will travel in France, Switzerland and Belgium.
- Dec. 2018 **Article for a French Magazine**, *Pour la Science*, Article on how we can measure the age of the most distant galaxies.
- Oct. 2018 **Conference**, *at Riom for the French Science Festival*, The history of the *Hubble* Space Telescope.
- Since 2018 **Chair of the Astr'Auvergne Festival**, *in Auvergne*, Three days of outreach talks by professional astronomers in a Stadium with a large inflatable screen. .
- Sep. 2017 **Conference**, *at Clermont-Ferrand*, Light on the galaxies.
- May 2017 **Organiser of Astro-Londres**, *in Lycée français Charles de Gaulle in London*, Two days of astronomical activities in a french school in London. Among all activities : planetarium show, sky map making, polaris aurora simulator, journey into our Solar System in virtual reality..
- May 2016 **Organiser of Astro-DOM**, *in Fort-de-France (Martinique)*, One week of astronomical activities dedicated to kids aged from 12 to 15. Among all activities : planetarium show, sky map making, polaris aurora simulator, journey into our Solar System in virtual reality..

- From November 2015 **President of *InfiniSciences***, Association aiming to share the knowledge in the center of France by inviting famous scientists to give public talks and to discuss with children in a school ([www.infinisciences.org](http://www.infinisciences.org)).
- Mar. 2015 **Conference**, at *Clermont-Ferrand*, Title : A journey to the frontier of the Universe.
- Aug. 2014 **On-line observations with the CFHT during the French Astronomy Festival.**
- Aug. 2013 **Contact with the International Space Station**, Responsible for a radio contact between children (8-10 years old) and Luca Parmitano on board the International Space Station.
- Aug. 2012 **Conference**, for the French Astronomy Festival, Title : The first galaxies : travel to the edges of our Universe.
- Since Aug. 2011 **Responsible for the Young French Astronomy Festival.**, Astronomy festival dedicated to children between 4 and 16 years old, I am also responsible in raising funds and partners.
- Jul. 2012 **Conference**, at the *Cité de l'Espace*, Title : The easiest way to find galaxies far far away.
- Oct. 2011 **Responsible for an exhibition**, for the National French Science Festival, Title : Are we alone in the Universe ?.

## Languages

French	<b>fluent</b>	<i>native speaker</i>
English	<b>fluent</b>	
Spanish	<b>advanced</b>	
German	<b>intermediate</b>	

## Computer skills

Programming Languages	Python, Fortran77, Fortran90, C, C++	Others	PGPLOT, LabView
Data Reduction	IRAF, Gasgano, HIPE, Reflex	Office software	L <sup>A</sup> T <sub>E</sub> X, Microsoft Office Pack, Open Office
Specific Software	SExtractor (Source Extractor), Hyperz (SED-fitting), BPZ (SED-fitting)		