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Abstract: In its final year, Europlanet’s Work Package NA2 ‘Impact through Outreach and Engagement’ has achieved its objectives of engaging a range of audiences (the general public, policymakers, journalists, teachers, students) with the activities of Europlanet and with general planetary science. In December 2018, Europlanet 2020 RI was selected by the European Commission as a Horizon 2020 success story and featured in an article in Horizon, the EU Research and Innovation Magazine. The Europlanet Media Centre has issued 20 press releases relating to the project (including the European Planetary Science Congress (EPSC) in Berlin in September 2018), which have been covered by leading media outlets worldwide. The Europlanet Outreach website has been successfully adapted as the basis for the new Europlanet Society’s website, ensuring that all the content will be sustainably maintained and update beyond the Europlanet 2020 RI project. Europlanet’s social media following has continued to grow steadily on Twitter, Facebook, Instagram and YouTube. An additional Europlanet Summer School was held at the Moletai Observatory in Lithuania, which included an extensive programme of science communication training and was attended by 21 young researchers and amateur astronomers from 17 countries. Outreach best practice was highlighted in special sessions at EPSC 2018, as well as a co-convened session on ‘Making the Case for Astronomy’ at the European Week of Astronomy and Space Science (EWASS). We have produced hard copies of the Europlanet Evaluation Toolkit and have revised and improved the online version. The 2019 Europlanet Prize for Public Engagement has been awarded to Dr Amelia Ortiz-Gil for her pioneering work in developing educational and outreach resources for people with a range of physical and cognitive special needs. The 2019 round of the Europlanet Outreach Funding Scheme has awarded grants to projects in Denmark, Portugal, Switzerland and the UK.

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1.1 Objectives

Europlanet 2020 RI's activities have a direct relevance to our understanding of our own planet, its origins, its past and future evolution, the conditions needed for life, and threats from our space environment, such as solar storms or Near-Earth Asteroids. This brings Europlanet 2020 RI into regular contact with industrial partners and policy makers, and the wider publics of Europe. The exploration of our Solar System has long been recognised as a potential 'hook' for attracting people with many diverse backgrounds and interests into science. This work package ensures that the work of Europlanet 2020 RI and the community it supports is known, understood and used by the widest possible community of stakeholders, and that inputs from external communities are taken into account by the project. The objectives of NA2 are:

- To take the successful Outreach and Engagement activities of Europlanet RI from FP7 to wider audience and more professional level in Horizon 2020;
- To ensure that planetary science inspires the next generation through collaboration with schools-focused projects such as [astroEDU](#) and [Space EU](#), and through the development of new outreach and educational tools, making use of the latest developments in planetary science;
- To develop and disseminate "best practice" through organising meetings and workshops;
- To train planetary scientists to communicate and engage with a variety of audiences;
- To support the outreach, engagement and education communities in planetary science, and provide a forum for new ideas to be developed;
- To provide a fully professional approach to using the mass and social media to make planetary science news and information available to a variety of wider publics;
- To ensure that policy-makers and industrial partners are well informed and engaged with the planetary science community; to ensure the community is aware of relevant industrial and political developments;
- To provide access to research students and early career researchers – particularly from under-represented states – to the key dissemination events for planetary science.

1.2 Explanation of the work carried per WP

Task 13.1: NA2 Management

Mariana Barrosa of the Science Office coordinates the 'Impact through Outreach and Engagement' NA2 Work Package with support from Anita Heward and working closely with all NA2 task and sub-task leaders, as well as other Europlanet 2020 RI WP leaders and Europlanet 2020 RI management, to ensure that results and activities of Europlanet 2020 RI are communicated effectively to external audiences (the media, general public, educators, policy makers etc).

Task 13.2: Outreach Services and Community Support

Sub-task 13.2.1. Outreach Services (U Leiden, SO, UCL)

A major task this year has been to refine and include user feedback on the Europlanet [Evaluation Toolkit](#), which was developed to assist organisers of outreach activities to evaluate the impact and outcomes for participants. The Toolkit was created by Dr Karen Bultitude and Dr Jen DeWitt of UCL and launched in pilot form in Year 3 of the project. Input has been gathered via a dedicated workshop in Athens in July 2018 and presentations at [EPSC 2018](#) and [EWASS 2019](#). The online version of the Toolkit has undergone a major revision, and a hard copy format has also been produced in the form of a pack with an instruction leaflet and a set of 14 double-sided instruction cards includes 14 tools. 100 copies have been printed and will be distributed at the EPSC-DPS Joint Meeting 2019, at other meetings and via the Europlanet Society Regional Hubs. Packs can also be [ordered](#) from the Europlanet Society website.

Sub-task 13.2.2. Meetings (U Athens, VU)

The Outreach Meetings task is led by Dr Eleni Chatzichristou of Institute of Accelerating Systems and Applications (IASA) and Dr Grazina Tautvaisiene of the University of Vilnius, with support from the team at Science Office. In Year 3 of the Project, the following meetings and sessions were organised:

- Best practice examples were presented as part of the science communication training modules at the Europlanet Summer School 2019.
- Five sessions in the Outreach Education and Policy programme stream at EPSC 2018 in Berlin included more than 60 oral and poster presentations across 5 sessions:
 - [OEP2](#): Planetary science as an example of Science communication in society
 - [OEP3](#): Europlanet Public Engagement Prize and Funding Scheme Showcase
 - [OEP5](#): Immersive visualization of planetary data
 - [OEP6](#): Astrobiology Teaching, Outreach and Dissemination
 - [OEP7](#): Policy Towards the International Lunar Decade & Planetary exploration outreach through Arts
- The OEP3 special session at EPSC 2018 in Berlin showcased the impact of projects funded by the Europlanet Funding Scheme and Prize through Europlanet 2020 RI, as well as Europlanet RI. The session was recorded and is available on [Europlanet's YouTube channel](#). A summary article is also being prepared for the Communicating Astronomy to the Public (CAP) Journal.
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Subtask 13.2.3. Training (U Leiden, UCL, SO)

Following the success of the Europlanet Summer Schools in 2017 and 2018, an additional Summer School was held at the Moletai Astronomical Observatory from 11-21st June 2019.



Figure 1: Students at the Europlanet Summer School 2019 use the “Physical Ranking Scale” to show how much experience they have with engaging with schools, from none (left) to a lot (right).

- The summer school aims to equip young researchers and amateur astronomers with skills in observational astronomy and in science communication. The science communication training sessions were led by Anita Heward (Science Office, Portugal/UK), Gail Renaud (Science Office/University of Glasgow),
- The modules included:
 - Basics of Science Communication and introduction to Evaluation
 - Writing for the Media
 - Engaging with Schools
 - Exhibition Design

- Social Media Communications
- Practical exercises included:
 - Drafting a press release
 - Developing activities for educators
 - Designing a 5x5m exhibit to communicate a planetary topic
 - A science communication skills “auction”.
- The workshop had 21 participants (12 female, 9 male) from 17 countries (Albania, Armenia, Austria, Bulgaria, Croatia, France, Georgia, Ireland, Italy, Lithuania, Norway, Poland, Romania, Spain, Turkey, UK and Vietnam, comprising young scientists (post-doctoral researchers, PhD students, Masters students and undergraduates) and amateur astronomers.
- A report on the workshop can be found at: <https://www.europlanet-society.org/europlanet-summer-school-2019/>

In Year 4 of the project, Europlanet 2020 RI has also supported outreach and education initiatives associated with the Danakil Depression TA1 site. These initiatives have been led by Barbara Cavalazzi, who has been instrumental in the JRA work to characterise the site.

- From 17-18 November 2018, a teacher training workshop, [SPACE I – Earth’s Spheres](#), was held in Mekelle. It was attended by 46 science teachers from schools in the Tigray and Afar regions of Ethiopia. The workshop aimed to support teachers in developing their teaching skills and to provide an opportunity to meet scientists and other teachers to share ideas and experiences on planetary sciences education. The workshop was delivered by five trainers from the University of Mekelle (Tsehaye Gebrelibanos, Henok Shiferaw, Hagos Weldegebriel), the University of Bologna (Barbara Cavalazzi) and the Open University (Karen Olsson-Francis). Local organisational support was provided by the Institute of Climate and Society (Kelali A. Tekle and Solomon Hishe).
- Over the course of the training, topics discussed included the interactions of the geosphere, hydrosphere, atmosphere, biosphere and cosmospheres. The desired outcome is to use the local school system (especially in rural areas) to develop an educational programme promoting awareness of the local environment in harmony with the needs of the local communities.
- Following the success of this workshop, Dr Cavalazzi ran the first ‘[Afar Desert Class](#)’ as a collaboration between Europlanet 2020 RI, GEMMA (Estense Mineralogical and Geological Museum of the University of Modena) and Reggio Emilia, as well as with the support of some private associations and supporters.
- ‘Afar Desert Class’ is a learning experience designed for elementary and middle school students of the village nearest to the Danakil site to help them understand the uniqueness of the place where they live. The course took place from February 23rd to 25th and involved 60 children from the Hamed’Ela elementary school, their six teachers, as well as many members of the community of the village. On the first day, the teachers were taught about the geological speciality of the region. On the second day, the children were taken out to the Dallol volcano in cars. The children were given a practical insight into what the region means from a scientific and geological point of view, as well as the importance of protecting it from the environmental damage that tourism can bring (e.g. with plastic pollution). On the third day, back at the village, families came to the school to see a photo exhibition about the project, with the children acting as guides. The school was given educational resources so that the students and teachers could continue the learning experience independently.

13.2.4 Sub-task Europlanet Prize and Funding Scheme

Dr. Régis Courtin of the Observatoire de Paris leads the Europlanet Prize and Funding Scheme, convening the Jury and managing the distribution of funds and prize giving (Milestone MS122: 3rd Prize and funding awards). During Year 4 of the Europlanet 2020 RI project:

- A formal presentation of the Europlanet Prize for Public Engagement 2018 was made to Dr Amara Graps of Baltics in space during the Opening Ceremony of EPSC 2018 in Berlin.
- Europlanet 2020 RI launched the 2019 round of the [Europlanet Prize for Public Engagement in Planetary Science](#) and [Europlanet Outreach Funding Scheme](#) at EPSC in Berlin in September 2018.
- The Jury that assesses applications for the Funding Scheme and nominations for the Prize is made up of members of the Europlanet 2020 RI outreach team (Régis Courtin (Chair), Mariana Barrosa, Eleni Chatzichristou, Anita Heward, Pedro Russo) and independent external outreach and education experts (Yael Naze (University of Liege), Alain Doressoundiram (Observatoire de Paris), Fiorella Coliolo (ESA) and Oana Sandu (ESO)).
- The Jury met to evaluate submissions for the 2019 prize and funding scheme on 28 February 2019.
- The Europlanet Prize for Public Engagement 2019 has been awarded to Dr Amelia Ortiz-Gil for her pioneering work in developing educational and outreach resources for people with a range of physical and cognitive special needs.



Figure 2: Europlanet Prize Winner 2019, Dr Amelia Ortiz-Gil. Credit: Credit: M. Pallardó

- There were 3 nominations for the prize (from Ireland, Spain and Sweden) in 2019.
- [A press release](#) announcing the Prize was issued on 30th April 2019.
- There were 17 applications for the funding scheme in 2018 (Greece, Ireland, Spain, and UK). This was an increase compared to the disappointing response in 2018 (4 applications) and back in line with the number of applications in 2017 and 2016 (17 and 16 respectively).
- The funding scheme results were announced formally on the [Europlanet Outreach website](#) on 4th April and in the March edition of the [Europlanet Outreach Newsletter](#).
- Grants were awarded as follows:
 - 7,500 Euros for "Help your Alien – A Solar System Game", a board game for players aged 6-12 led by Instituto de Astrofísica e Ciências do Espaço, Portugal.
 - 3,000 Euros for "Heritage in Space", a project led by the Beyond the Earth Foundation, UK, to develop an online, pilot interactive platform for audiences across Europe to contribute their experiences, memories and contemporary observations of planetary spacecraft in order to collectively identify objects which possess intrinsic 'space-heritage' significance.
 - 6,000 Euros to develop a pilot episode of "Confessions of History... of Science", led

by NCCR PlanetS, Bern University, Switzerland.

- 3,500 Euros for the “Space Days 2019: Around the Moon” exhibition led by the Danish Astronautical Society, Denmark.

Task 13.3: Dissemination to Stakeholders

Sub-task 13.3.1. European Planetary Media Centre (SO)

The Europlanet Media Centre is coordinated by Anita Heward (SO), working closely with the Social Media Manager, Sara Mynott (SO), Livia Giacomini (INAF), who is the EPSC Press Officer as well as the Europlanet Policy Officer, task leaders from other Europlanet 2020 RI work packages and Europlanet 2020 RI Management.

- Europlanet 2020 RI was selected by the European Commission as a Horizon 2020 success story and featured in an article in Horizon, the EU Research and Innovation Magazine and promoted on the official Horizon 2020 and DG Research & Innovation Twitter channels. ‘[Infrastructure boost for planetary science in Europe](#)’ included an interview with Europlanet 2020 RI Coordinator, Prof Nigel Mason of the Open University/University of Kent, that gave an overview of the current project and looked ahead to what’s next for Europlanet.
- A major activity for the Europlanet Media Centre is to provide press office support for EPSC. EPSC 2018 attracted 1016 participants from 40 countries, including 11 representatives of the from DW, German Public Radio/WDR, Nature Geoscience, Nature Astronomy, Tähdet ja avaruus, Deutschlandfunk, Aktuality.sk/Zive.sk and Media INAF.
- During EPSC, the Press Office was staffed by Anita Heward (EPSC Press Officer), Livia Giacomini (EPSC Press Officer) and Sara Mynott (Europlanet Social Media Manager).
- In advance of the meeting, Ulrich Köhler, the Public Relations Coordinator at DLR and Communications lead for the LOC, issued a German-language press release about the upcoming EPSC 2018 - [Größtes Treffen europäischer Planetenforscher 2018 in Berlin](#). This received wide coverage in the German and Austrian media, including [Spiegel Online](#), [Der Standard](#) and [ORF.at](#).
- EPSC Press Officers, Anita Heward and Livia Giacomini, issued two media invitations, two details of press briefings and eight press releases on science presented at the meeting, as well as a press release to announce the winner of the Farinella Prize 2018:
 - 18 September 2018 - [Hit-and-run heist of water by terrestrial planets in the early Solar System](#) (Christoph Burger)
 - 18 September 2018 - [Early birth and strange chemistry – Mercury studies reveal an intriguing target for BepiColombo](#) (Bastian Brugger and Thomas Ronnet, University of Aix Marseille)
 - 19 September 2018 - [ExoMars highlights radiation risk for Mars astronauts, and watches as dust storm subsides](#) (Jordanka Semkova, Bulgarian Academy of Sciences and Nick Thomas, University of Bern, Switzerland)
 - 19 September 2018 - [2018 Farinella Prize Awarded to Francis Nimmo for Work on Giant Planets’ Satellite Systems](#)
 - 20 September 2018 - [Candy-pink lagoon serves up salt-rich diet for potential life on Mars](#) (Rebecca Thombre, Modern College, Shivajinagar, Pune-5, India)
 - 20 September 2018 - [ScanMars demonstrates water detection device for astronauts on Mars](#) (Alessandro Frigeri, INAF, Italy)
 - 20 September 2018 – [Europlanet Society launched at the European Planetary Science Congress 2018](#)
 - 21 September 2018 - [Origami opens up smart options for architecture on the Moon and Mars](#) (Anna Sitnikova, Netherlands)

- 21 September 2018 - [Catalogue of planetary maps, past and present, highlights our evolving view of our Solar System](#) (Henrik Hargitai, Eötvös Loránd University, Hungary and Mateusz Pitura, University of Wroclaw, Poland)
- 21 September 2018 - [Plans for European Astrobiology Institute Announced](#)
- The press release [Candy-pink lagoon serves up salt-rich diet for potential life on Mars](#) featured a research trip funded through the Europlanet 2020 RI TA1 programme. The press release on the launch of the Europlanet Society highlighted the culmination of Europlanet 2020 RI's sustainability plan.
- Two press briefings were held during EPSC and both were webcast to provide access for journalists worldwide:

Monday, 18th September – [Mercury and BepiColombo](#)

- New results on the birth and strange chemistry of Mercury – Thomas Ronnet and Bastien Brugger (University of Aix Marseille)
- One month to BepiColombo launch – Johannes Benkhoff (European Space Agency)
- Investigating mysterious Mercury with BepiColombo – Joana Oliveira (European Space Agency)
- The Mercury Magnetospheric Orbiter of the BepiColombo mission – Go Murakami (JAXA)

Friday, 21st September – [Astrobiology and Society in Europe Today](#)

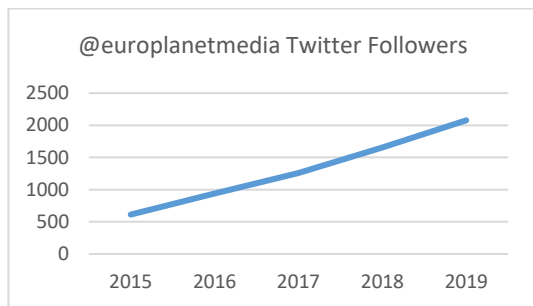
- Key science and research areas for astrobiology – Prof Nigel Mason (Open University, UK)
- Astrobiology and society and Europe – Dr Klara Anna Čápková (Durham University, UK)
- Environment and sustainability for astrobiology – Dr Erik Persson (Lund University, Sweden)
- Leading the future of astrobiology in Europe: The European Astrobiology Institute – Prof Wolf Geppert (Stockholm University, Sweden)
- Press releases and the press briefings from the meeting were covered by leading media outlets around the world, including [Berliner Morgenpost](#), [The Sunday Times](#), [ANSA](#), [Forbes](#), [CNN](#), [IFL Science](#), [Nature India](#), [Popular Mechanics](#), [Zive](#), [EFE](#), [EuropaPress](#), [Space.com](#) and [Nauke W Polsce](#). For details of coverage of the press releases, see a more detailed spreadsheet [here](#).
- Additional press releases and web stories during Year 3 of the project have covered activities of Europlanet 2020 RI, including:
 - TA1 ([Ultra-small microbes exhibit extreme survival skills in Ethiopia's Mars-like wonderland](#))
 - TA2 ([The Aarhus Mars Simulation Wind Tunnel featured as ESA Technology Image of the Week](#))
 - VA2 ([2nd Planetary Mapping and Virtual Observatory Workshop](#))
 - NA2 ([IAU astroEDU Selected as a Top-100 Education Initiative from Across the World, Europlanet Prize for Public Engagement 2019 awarded to Dr Amelia Ortiz-Gil](#)).

Sub-task 13.3.2. Online and Social Media (SO)

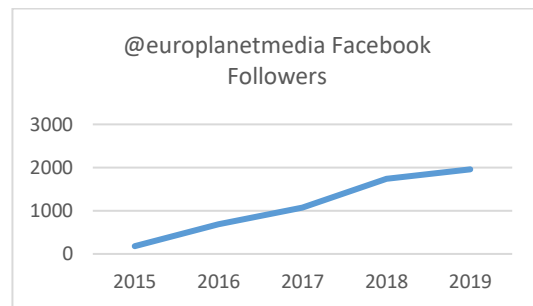
As part of the Europlanet 2020 RI sustainability planning, a decision was made to use the Europlanet outreach website (which has been updated continuously since 2006) as the basis for the new Europlanet Society’s website. In September 2019, the ESF took over hosting from Science Office and www.europlanet-eu.org was redirected to www.europlanet-society.org. All the content was migrated across to the Society site and has continued to be updated. In Year 4, the website has featured stories to highlight European contributions to Insight and the Dawn mission, as well as guest posts by members of the Europlanet 2020 RI team who attended the BepiColombo launch. There have been 69 posts on the Europlanet Outreach website during the year, including 20 press releases, 14 Early Career stories, 4 features on European involvement in missions (BepiColombo, Dawn, Insight), 11 reports on meetings, workshops and other activities, and 20 announcements.

Europlanet 2020 RI’s social media presence is managed by Sara Mynott of Science Office. Europlanet maintains a social media presence on [Facebook](#), [Twitter](#), [Instagram](#), [Flickr](#) and [YouTube](#).

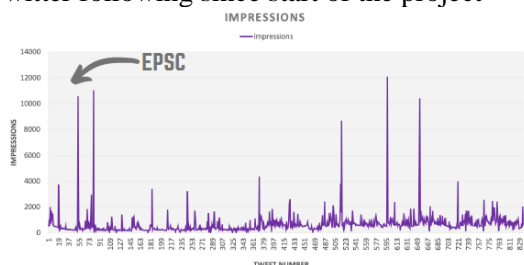
- Information is posted on a regular basis (usually daily, but more frequently during events e.g. EPSC or Europlanet workshops).
- Europlanet’s social media following has grown significantly since the start of the project: on Twitter from 612 in September 2015 to 2077 in August 2019 and on Facebook from 180 in September 2015 to 1959 in August 2019. Follower growth was greatest during the EPSC 2018. Outside the annual conference, Europlanet followers have increased at a consistent rate throughout the year.



Twitter following since start of the project



Facebook following since start of the project



Twitter Impressions during Year 4 of the project



Facebook Reach during Year 4 of the project

Figure 3: @europlanetmedia followings on Twitter and Facebook

- Europlanet’s YouTube channel has 326 subscribers and 41,729 views.



Figure 3: Still from Europlanet webinar featuring Indhu Varatharajan speaking on “BepiColombo”

- In Year 4 of the project, Europlanet 2020 RI has continued to develop its webinar programme. The webinars are hosted by the Nuclio Foundation in Portugal, which is a recognised European leader in training teachers in the use of new technologies and the promotion of real research in classroom. The webinars are held on Zoom and an edited version is uploaded to YouTube after the event. Participants are encouraged to register in advance, although they can still access the Zoom link without registering beforehand.
- Europlanet webinars are managed by Nuclio, based in Portugal, and have included live participation from schools in Europe and around the world.
- Europlanet held eight webinars during Year 4 of the project:
 - September 2018 – “Biosphere 2” with Kevin Bonine, Biosphere 2’s Director of Education and Outreach
 - October 2018 – “BepiColombo Mission to Mercury” with Indhu Varatharajan, PhD Research Fellow at German Aerospace Center (DLR)
 - November 2018 - “Working the Magic of Visual Effects on Raw Space Data” with Matt Brealey.
 - January 2019 - “The atmospheres of exoplanets” with Dr Joanna Barstow of UCL.
 - April 2019 – “Searching for Life Outside of Earth: Perspectives of Science Fiction vs. Reality” with Dr Julie Novakova, Charles University in Prague.
 - April 2019 – “Volcanism and Mars” with Dr Petr Brož, Institute of Geophysics, Czech Academy of Science.
 - June 2019 – “Volcanism on Io” with Dr Ashley Davies of JPL
 - July 2019 - Dr Amelia Ortiz-Gil of the University of Valencia

Europlanet 2020 RI celebrated the launch of the BepiColombo mission with a series of blog posts by Joern Helbert and Indhu Varatharajan, who reported on the launch from Kourou and ESOC respectively. Indhu Varatharajan also participated in a webinar, which was one of the highest viewed in Year 4 of the project (54 live participants on Zoom, including 8 school classes, and 123 views on YouTube).

See [Appendix 1](#) for a full report on social media.

Sub-task 13.3.3. Policy-makers and Industry (SO, INAF)

Livia Giacomini (INAF) is the Europlanet Policy Officer, working closely with the Europlanet 2020 RI Coordinator, Nigel Mason (OU), and the Communications Officer, Anita Heward (SO). During the reporting period:

- A panel discussion on “Making the case for European astronomy and space science: public and political engagement” was held at the European Week of Astronomy and Space Science (EWASS) 2019, Lyon, France, on 26th April with a panel including:

- The former MEP Clare Moody
- Andy Williams, the External Relations Officer at the European Southern Observatory
- Robert Massey, Deputy Director of the Royal Astronomical Society
- Niall Smith of the Cork Institute of Technology / Blackrock Castle Observatory.
- For details of the session, see the [report on Making the Case for Astronomy](#).
- Europlanet 2020 RI provided input for [ESA's Voyage 2050 Long-term Plan for Education and Public Engagement: White Paper](#) in response to the Voyage 2050 Call for White Papers from the Science Programme of the European Space Agency.

Task 13.4 - Development of Outreach and Educational Tools

Sub-task 13.4.1. Planetary Video Shorts (SO)

The Planetary Video Shorts task is led by Science Office and is managed by Mariana Barrosa.

- In Year 4 of the project, Europlanet produced translations of its animations into French, German, Italian and Spanish.
- The French version of the “Astrobiology – Life in the Universe” video was included in a touring exhibit by [S\[Cube\]](#), which creates annual touring exhibits that are displayed at venues around the Ile-de-France and wider France. The [exhibits](#) are typically visited by 6,000 people.
- To date, we estimate that the videos overall have had at least 112 000 views (around 62,000 through Europlanet and Science Office channels and 50,000 through sharing of the videos on other platforms e.g. Space.com).



Figure 4: Europlanet 2020 RI's Astrobiology video was used by S[Cube] as part of a touring exhibition and for schools events

- An additional video, using footage from the four animations, has been created to promote the Europlanet project overall. This was promoted by the [@EU_H2020](#) and [@EUScienceInnov](#) Twitter accounts in December 2018.

Sub-task 13.4.2. Planetary Analogue and Comparative Planetology Outreach and Educational Tools (LU, INTA)

- Pilot outreach tools (Deliverable 13.7, Milestone 124, delivered month 30) is led by Amara Graps of the University of Latvia and Felipe Gomez of CAB-INTA, with support from the Science Office team.
- In Year 4 of Europlanet 2020 RI, this activity has worked in partnership with Zinoo science centres in Latvia to run schools workshops linked to the Planet PI project.

There are several significant success stories that have come out of the Europlanet Funding Scheme. The seed funding provided to “A Space Eyeful – Virtual Microscope for Extraterrestrial Samples” in 2010 created an online [Europlanet collection of 20 meteorite samples](#). This was the first time that the Virtual Microscope, developed by the OU for distance learning teaching, had been applied to extraterrestrial samples and for outreach purposes. The [Virtual Microscope](#) gives online access to virtual thin sections that enables users to study a meteorites’s properties, size, shape, proportion and colour, and also analyse the micro textures as if using a specialist petrological microscope. Following the success of the Europlanet collection, additional extraterrestrial collections have been added, including lunar meteorites, martian meteorites, British and Irish Meteorites and Apollo lunar samples.

Mahesh Anand, the project lead said during his EPSC 2018 presentation: “This Europlanet funding really turned out to be the catalyst for this mega-project that was to come.”

The session showed that the impact of Europlanet seed funding can be unexpected. AMB Space was awarded a grant by Europlanet Outreach Funding Scheme in 2011 to develop a Virtual Mars Rover (VMR) multi-user game. The initial grant allowed concept development, and together with success of the team in robotic engineering contest University Rover Challenge (Magma team), contributed to AMB Space attracting seed investor funding through a business incubator and establishing a space startup. Today ABM Space is a laureate of Airbus Merck KGaA Sustainable Exploration Prize 2017 for a solar sail concept. Currently, at the Polish National RnD Center, ABM runs a 500,000 EUR grant within GameINN programme called ReMY (Remote Mars Yard), a system combining virtual Mars simulator game, a physical Mars mock-up and a physical robot, accessed through the Internet. The scenario and gameplay model was largely taken from the original VMR concept.

Projects funded through the funding scheme during Europlanet 2020 RI are also now starting to have an impact. In the 2016, Speak Science was awarded 7,500 Euros to develop Planets in a Room (PIAR), a low-cost planetary simulator and planetarium projector. The project was given further grant of 7,500 Euros in 2018 on delivery of a working prototype for dissemination. PIAR simulators are now being used by 12 groups around Europe, have been seen by an estimated 100,000 visitors and have been featured in the Italian and [German](#) media. In August 2019, Europlanet 2020 RI has purchased an additional 11 kits to distribute to beneficiaries and the Europlanet Society’s Regional Hubs.

In 2017, the National and Kapodistrian University of Athens was given 7,000 Euros to develop “Planets in your Hands”, a portable interactive exhibition of planetary surface models embedded in rectangular frames. The exhibition is now completed and it has been used at several events in Athens this spring with over 2000 visitors using the exhibit.

The Connacht Schools Planetary Radio Telescope Network, led by the National University of Ireland Galway and funded in 2018, met its deadline of being operational in time to observe Jupiter during its apparition from April to August 2019.

1.3.2 Diversity and Inclusion - engaging European citizens across the EU



Figure 6: Students and tutors at the Europlanet Summer School 2019 in Moletai, Lithuania. Credit: Marina Carmona Ruiz

NA2 tracks the gender balance of all its outputs. In Year 4 of the project, 24% of researchers quoted or mentioned in the main text of press releases issued by the Europlanet Media Centre were female, 22% of researchers participating in press briefings at EPSC 2018 were female (2/9), 43% of the talks streamed during EPSC had a female presenter (20/46), 50% of guests on Europlanet's webinars (4/8) were female, as were 50% of Facebook interviewees (7/14). The gender balance in the webinars and interviews reflect the situations where the Europlanet team has full control over the reflection of the line-up. The aim of the Facebook interviews was to show role models to young people and the interviewees reflect a range of backgrounds and ethnic diversity within the community.

Europlanet 2020 RI's outreach activities have placed a particular emphasis on engagement with countries that are currently [under-represented](#) in the European planetary science community. Priority is given to holding Europlanet's science communication training and best practice workshops in these under-represented states to assist in building and supporting outreach communities related to planetary science. Over half of the participants at the Europlanet Summer School 2019 at the Moletai Observatory in Lithuania were from under-represented countries (Albania, Armenia, Bulgaria, Croatia, Georgia, Lithuania, Poland, Romania, Turkey and Vietnam).

The Year 4 workshops bring the total of researchers, amateur astronomers and outreach professionals trained by Europlanet 2020 RI in science communication skills since the project started to 130, including 79 from under-represented states, 70 female and 60 male participants.

1.3.3 Dissemination of results

The results of Europlanet's activities have been successfully disseminated through the Europlanet Media Centre and Europlanet's social media channels. Europlanet 2020 RI has issued 20 press releases related to its activities in Year 4 of the project (including EPSC 2018), and has also assisted partner

institutions to reach a wider audience by translating their press releases into English and by posting on the Europlanet website and on the AlphaGalileo media service. Europlanet activities in Year 4 of the project have been covered by many of the world's leading and most trusted media outlets around the world, including Der Spiegel, ORF.at, Der Standard, ANSA, RAI News, Sky, National Geographic, El Pais, EuropaPress, ANSA, The Independent, The Sunday Times, Zive, Forbes, Popular Mechanics, Universe Today, Space.com, Nature India and the Times of India.

Europlanet 2020 RI's activities in the Danakil Depression have continued to attract significant media attention, including coverage of findings of Nanohaloarchaeles Order bacteria in extreme conditions at the Dallol volcano, which was covered by the media worldwide.

For full details of coverage, see:

https://docs.google.com/spreadsheets/d/145V719z2LCMNMLmm_iOj2txpQPFzM2yEsENoIktOue8/e/dit#gid=458450317

1.3.4 Inspiration and education

Throughout Year 4, Europlanet has continued to develop its [webinar](#) programme with a focus on schools and teachers. An average of 5 classrooms have participated in the webinars during term time.

Since Europlanet's first field trip to the Danakil Depression in April 2016, opportunities have arisen to collaborate with Barbara Cavalazzi at the University of Bologna and colleagues at the University of Mekele in Ethiopia on education and outreach activities. The SPACE I – Earth Spheres and Afar Desert Class are important pilots for how Europlanet could develop further community outreach and educational collaborations around other field sites in Africa and elsewhere around the world.

1.3.5 Engaging with Policy Makers and Industry

Year 4 of the project has coincided with election for the European Parliament. This has meant that some of the MEPs that Europlanet 2020 RI has worked most closely with, including MEP Clare Moody, have left the parliament.

Ms Moody participated in the EWASS 2019 in the “Making the Case for Astronomy” policy session. Her advice on engagement with policy makers included a strong suggestion to start making links as early as possible with the new intake of MEPs. In response, Europlanet 2020 RI has worked with a summer intern at the University of Kent, Holly Perry, to research the background of all 746 MEPs in order to highlight those with scientific or engineering backgrounds and identify members of the ITRE Committee that are most likely to be interested in the activities of Europlanet 2020 RI and its successor projects.



Figure 7: Clare Moody presenting at the European Week of Astronomy and Space Science (EWASS) 2019

Europlanet 2020 RI's industry engagement in Year 4 has focused on an industry session at EPSC 2018, the iCubeSat 2019 meeting (see NA1 Report, D.12.4), and industry discussions at the NA1 meeting in Budapest in June 2019. As an outcome of this last meeting, industry representatives of the Europlanet Society Regional Hubs have agreed to work on a white paper that will outline strategy for developing industry relationships with the scientific community, including training of young scientists for entry into industry career paths. The Hub industry representatives have also been working to validate the Europlanet industry database created by Europlanet Industry Officer, Dr Marcell Tessenyi (Blue Skies Space Ltd (BSSL) in Year 2 and 3 of the project.