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Abstract:

During the second year the WP12 (networking activity NA1: Innovation through Science Networking), has continued its activity. We have arranged meetings and planning meetings, as well as topical workshops and expert exchange visit Calls, which facilitate short-term visits and exchange of personnel (including industrial partners) to share best practice and expertise and to expand the horizons of the ERA community. Through these activities, NA1 will enhance the ability of European planetary scientists to participate on the global scene with their own agenda. We have worked on the scientific topics that are currently most relevant to bring together the various sections of the European planetary science communities, inclusiveness states, early stage researchers, amateur associations, commercial and industrial organizations. During the second project year we organized 13 workshops and several internal planning meetings to accomplish our objectives.

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1. Continuous Reporting

The following sections will be also fed into the portal, under the continuous reporting, so that this document constitutes part of the second periodic report, for the months 13-24 of the project.

1.1. Dissemination

Up-to-date list of NA1 dissemination activities are located on:

<https://docs.google.com/spreadsheets/d/1KYgqt7cwBF49T4pFfJSKHODgla-1gfvGEo0DzQwjUZA/edit?usp=sharing>

1.2. Deliverables

Deliverable Number	Deliverable Title	WP number	Lead beneficiary	Type	Dissemination level	Due Date (in months)
D12.2	2nd NA1 Annual Report	WP12	10- FMI	Report	Public	24

1.3. Milestones

Milestone number	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification	Status
M93	2nd Annual meeting of NA1	10 - FMI	23	2nd Annual meeting of NA1	29.8.-30.8.2017

M97	Year 2 NA1 task 3 meetings	18 - Wigner RCP	24	In months 13-24, at least 3 meetings will have been held for NA1 Task 3 led by ISSI and Wigner RCP	The first ISSI-EP forum was held on 13-14 Sep 2016. The two more meetings are on organisation of ISSI-EP workshops, one of the coordination meeting was in June, the second was substituted by a chain of teleconf. The meeting of the org. comms will take place next year.
M101	Year 2 NA1 Task 4 Meetings	12 - ABER	24	In months 13-24, at least 3 meetings will have been held in this year for NA1 Task 3 led by ABER and FMI	13 -15 Sept 2016, Bern, Switzerland 21-23 Sept 2016, Luxemburg. 24-27 Oct 2016 Pasadena, USA 14-18 Nov 2016, Antwerp, Belgium
M105	Year 2 NA1 Task 5 meetings	8 - OEAW	24	In months 13-24, at least 3 meetings will have been held in this year for NA1 Task 5 led by OEAW and VU	- June 09-12, 2017, Pic du Midi, France - July 18-28, 2017, Moletai, Lithuania - July 18-27, 2017, Alpbach, Austria - October 25-27, 2017, Seggau, Austria

M109	2nd ISSI Workshop	34 - ISSI	27	2 nd ISSI Workshop	Under prep. Planned for February 2018.
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2. Explanation of the work carried out by the beneficiaries and Overview of the progress

2.1. Objectives

2.1.1. WP 12.1 Objectives of the second year

The WP Coordination Team is led by FMI, supported by the deputy coordinator from Wigner-RCP, who are members of the Impact and Innovation Sub-Board. They are advised by a broader Core Team, made up of the leaders of NA1 tasks 2-5. The WP 12.1 Lead will be in charge of the overall NA activities, coordinating the task Leaders, be responsible for dissemination, and manage the WP webpage.

Objectives for the second year were:

3. Operating the NA1 webpage and internal portal for tasks
4. Integrating and linking NA1 activities to the overall EPN2020 activities efficiently
5. Supporting the Expert Program
6. Overall coordinating and supporting the work done within the NA1 tasks
7. Supporting the workshop activities within the NA1 tasks
8. Arranging the NA1 meetings
9. Preparing the documentation/deliverables

9.1.1. WP 12.2 Objectives of the second year

The major objective of the task is to bring together the different science teams, especially new teams working on similar science topics and missions, to strengthen links and counter the fragmentation that still exists in the European planetary science community. Meetings will be made widely accessible by teleconference, e.g. Webex, tools. Meeting presentations will be made available on the project's web page; a summary report will be prepared for the broad community. Special efforts will be made to involve scientists from Inclusiveness States. Topical science workshops will be organized, many of which will be based on the currently active ESA/NASA missions and in preparation of future missions.

The main objective of the period May-Aug 2017 of NA1-Task 2 was the organisation/financing of 3 topical workshops:

- Comets formation
- 5th CHEOPS science workshop
- Early history of planetary systems and habitable planets

9.1.2. WP 12.3 Objectives of the second year

For the second year, WP 12.3 had two major objectives:

- carry on with the organisation of the ISSI Europlanet workshops
- carry on with the organisation of First ISSI-Europlanet forum

9.1.3. WP 12.4 Objectives of the second year

The overarching objectives of the WP12.4 for the second year were:

- WP12.4 will deliver two thematic workshops with participants from industry and academia
- Bring together the EPN2020-RI Industry Officer along with science and industrial teams to promote the innovation that is inherent in space activities because of the challenging environments they work in.
- Workshops on innovative instrumentation for planetary missions.
- Workshops on cooperation between EUROSPACE and the European planetary science academia.

9.1.4. WP 12.5 Objectives of the second year

The main objective of the second year of NA1-Task 5 was the organisation of 3 topical workshops for the ground-based support of space missions. The preparation of one of those workshops already started in project year one, i.e. Planetary Radio Emissions VIII. In addition, it was already defined during the first project year that a second summer school will take place at the Moletai Observatory in Lithuania on the topic of ground-based support of space missions.

Other objectives of the project year 2 were the support of the Alpbach Summer School in July 2017, starting the extensions of the ground-based observatories database (the so-called NA1-Matrix), as well as an on-going collection of workshop feedback (via the in project year one developed feedback form). From the already well established contacts to the amateur community another important objective for project year 2 arose, which is the organization and support of dedicated amateur sessions at EPSC 2017 in Riga, Latvia.

A further continuous objective of project year 2 was the regular communication within NA1-Task 5.

Dissemination

Europlanet 2020, including NA1-Task 5, was presented at the Workshop Planetary Radio Emissions VIII in Seggau, Austria, October 2016. Furthermore, talks on Europlanet 2020, including NA1-Task 5, were held at seminars at the Moscow State University (May 2017) and University of Graz in (June 2017). The aims and goals of NA1-Task 5 were additionally briefly presented at the Summer School “The Dusty Universe” in Alpbach, Austria, as well as at the Europlanet Summer School in Moletai, Lithuania, both in July 2017. At the latter summer school a public talk was additionally dedicated to science communication and Europlanet 2020.

All workshops and summer schools funded and supported by NA1-Task 5 issued one or more press releases and dissemination activities. Planetary Radio Emissions VIII issued a German press release, which was covered by the Austrian Press Agency. The Pic du Midi T1M Planets Observation Campaign had excellent media coverage, including articles in e.g. “Le Monde”

and many astronomical blogs. One Saturn image even was released as the *Astronomy Picture of the Day* on June 17, 2017, giving maximal visibility to all amateur astronomers around the world (see the following website for further details: <https://apod.nasa.gov/apod/ap170617.html>). Furthermore, both summer schools supported by NA1-Task 5 showed excellent media coverage. The Alpach Summer School was even presented with an article at the official ESA website.

9.1.5. WP 12.6 Objectives of the second year

The objective of Expert exchange program (Task 6) is to support the activities of Europlanet RI with experts and scientific exchange whenever it is needed.

During the reporting period 2 standard Expert exchange calls and 2 special calls were opened. 1 special call was to support participation in IPPW-14 workshop, and 1 for Journalists /Science communicators to visit a Europlanet institute or lab.

4 applications were received and approved in the standard calls. The visits were proposed to CNRS, France, Open University, UK, University of Michigan, USA, and Aberystwyth University, UK. Visit to CNRS was realized and report received, the rest of the visits are scheduled for September - November 2017. In addition, 3 pending reports from previous calls were also received.

7 applications for IPPW-14 participation were received and approved, with 6 participations finally realized. The call for Journalists/Science communicators closes in the end of August 2017.

9.2. Explanation of the work carried for NA1

9.2.1. WP 12.1

During the second year the management structure of the NA1 activity worked as it was established during the first year.

- In the core of the NA1 activity is the WP Coordination Team led by the NA1 Lead Dr Ari-Matti Harri from FMI, together with the deputy Lead Dr Karoly Szego from Wigner-RCP. The Coordination team was in charge of the overall NA activities, coordinating the task Leaders, responsible for dissemination, and manage the WP webpage.
- The NA1 Executive team made up of the leaders of NA1 tasks 1-6 supported the Coordination team. Individual Task Leaders defined the annual activities of their Tasks. The **NA1 Exec Team** consists of
 - Dr. Ari-Matti Harri (FMI), Chair
 - Prof. Karoly Szego (Wigner-RCP)
 - Dr. Norbert Krupp (MPG)
 - Prof. Manuel Grande, U. Aberystwyth
 - Dr. Gunter Kargl, OEIF
- The NA1 Advisory Board will provide the reviewing functions for the NA1 activity. The proposals for the Expert Exchange Visits and the annual plans of the Tasks was sent for the advisory Board for review to be approved. The members of the **Advisory Board** are:
 - Dr. Maria Teresa Capria (INAF), Chair

- Dr. Philippe Louarn (CNRS), Deputy Chair
- Prof. Karoly Szego (Wigner-RCP)
- Dr. Ari-Matti Harri (FMI), secretary (no voting power)

The webpage serving as the principal information channel for the NA1 was put on place as the main information channel of the NA1 activity including:

- Overall presentation and information regarding the NA1 activities, objectives and results
- Expert Program electronic application and reporting section
- Intranet webpage for NA1 task leaders (password protected)
- All workshop information (upcoming and past)
- “Propose a workshop” webpage where anyone can propose a new workshop for NA1

Dissemination

Work has started to disseminate the results at various conferences.

The first part of this work was presented during the EGU this year, see above

The second part will be presented during the European Planetary Science Congress, Riga, 17-22 September, 2017. The programme group OEP – Outreach, Education and Policy will have two sessions for this purpose. One is OEP1: Policy & Sociocultural Aspects of Planetary exploration: NA1-Networking of European planetary science communities and Citizen Science with Big Data. There will be two presentations:



[EPSC2017-616](#)

Inclusiveness program – a SWOT analysis

[EPSC2017-269](#)



Joint activity together with ISSI and NA1/WP12

and Session MT15

European Vision 2061 and NASA Planetary Science Vision 2050, where among others the results of the ISSI Europlanet forum will be presented.

9.2.2. WP 12.2

The WP12.2 has worked on the scientific topics presently most relevant to bring together the various sections of the European planetary science communities, amateur associations, commercial and industrial organizations. The following workshops have been organized:

- 19.-23.6.2017, *Comets Formation*, Sofia, Bulgaria
- 24.-26.7.2017, *5th CHEOPS science workshop*, Seggau, Austria
- 8.-10.8.2017, *Early history of planetary systems and habitable planets*, Tartu, Estonia with a total of 192 Participants. Two of the workshops were held in inclusiveness countries.

Dissemination

During Comet Formation workshop a public outreach event was held in Sofia on 20th June 2017 with the Bulgarian public, students and representatives of the Ministry of Education and Science including talks and table discussions. The Bulgarian official journal of science “Az Buki” published an article about the workshop: <http://www.azbuki.bg/en/editions/azbuki/archive2017/newspaper26201>

In addition NA1 Task 2 co-financed the Summer School Alpbach 2017, "The Dusty Universe", July 18-27, 2017, Alpbach/Tyrol together with Task 5.

Planning for additional science workshops has been performed, especially such that will be based on the currently active ESA/NASA missions and in preparation of future missions.

The following upcoming workshops have already been agreed:

- 17.9.-22.9.2017: EPSC 2017 NA1 session, Riga, Latvia
- 25.9.-30.9.2017: Geosciences for understanding habitability in the solar system, Azores, Portugal
- 9.10-13.10.2017: Sun's influence on planets, IRAP, Toulouse, France
- 27.11.-29.11.2017: Sharing laboratory sample and field analog study results in VESPA, Brussels, Belgium

The list of all past and future Workshops can be seen on the NA1 web site (<http://fmispace.fmi.fi/index.php?id=na1epn2020>).

9.2.3. WP 12.3

During the 2015 Fall SC meeting, the members recommended that an ISSI/Europlanet Forum should trigger three workshops proposals for recommendation. The first ISSI-Europlanet forum was organized in 13-14 September 2016, and six proposals were submitted for selection by NA1 and ISSI. The following workshops were selected:

WS #1 on "Role of Sample Return Missions in the Exploration of the Inner Solar System", Mahesh Anand

Proposed format: one week in Bern as an ISSI-Europlanet (- ISSI-BJ) workshop, followed one year later by one week in Beijing as an ISSI-BJ/ISSI workshop.

WS #2 on "Comparative study of the atmospheres of planets and exoplanets", O. Korablev and K. Szego

WS #3 (5) on "Reading terrestrial planet evolution (Venus, Earth, Mars, Titan) in isotopes and noble gases measurements" H. Lammer

The organization of the workshops has started. WS#1 had their conveners meeting in Bern in early July and the workshop will be organised during the week of 5th February. They are in the process of inviting speakers. WS#2 and #3 are in the process of organising conveners.

During the first year of this project an ISSI-Europlanet forum was **convened in Bern, Switzerland on September 13th to 15th, 2016 by ISSI and Europlanet. The forum identified the key questions and representative planetary missions.** The **key priority questions** to be addressed in Solar System science;

- (1) The **representative planetary missions** that need to be flown to address and hopefully answer these questions;
- (2) The **enabling technologies** that will need to be available to fly this set of ambitious missions;
- (3) The **supporting infrastructures**, both space-based and ground-based, to be made available.

The forum results were presented during the EGU conference in Vienna. As a follow-up activity, this February a meeting was convened on the future technical realisation in Lausanne, outside of this project.

9.2.4. WP 12.4

NA1-Task 4 Workshop organisation

Europlanet 2020 NA1-Task 4 has organised or co-organised 4 workshops as follows:

- 13 -15 Sept 2016, Bern. ISSI-EPN forum on the "key questions in planetary science for the next 50 years" will explicitly address the key technologies required. There was a final tech dedicated session, the day after the two science days. For more information contacts Michel Blanc, Manuel Grande (michel.blanc@irap.omp.eu, m.grande@aber.ac.uk)
- 21-23 Sept 2016, Luxemburg. Asteroid mining addressed the scientific inputs needed to enable this technology. For more information contacts Amara Graps, Manuel Grande (graps@psi.edu , m.grande@aber.ac.uk)
- 24-27 Oct 2016 Pasadena. IWIPM-3 is the annual US technology foresight meeting, arranged this year to coincide with the EPSC-DPS joint meeting in Pasadena. It featured a Europlanet branded panel discussion, and we will support the presence of European technology providers. For more information contact Manuel Grande (m.grande@aber.ac.uk)
- 14-18 Nov 2016, Antwerp. Space weather and radiation design (in conjunction with PSWS). A workshop proposal has been accepted by the European Space Weather week (ESSW), the leading venue for commercial space weather providers in Europe. For more information contact Manuel Grande (m.grande@aber.ac.uk)

Manuel Grande attended a meeting in Lausanne in Feb 2017 to arrange the Planetary Exploration Horizon 2061 - Step 2 technology foresight meeting – co organised by Na1 Task4 and EPFL SwissTech which will take place in Lausanne, from 29 Jan to 1 Feb 2018 (TBC).

Plans for future WP 12.4 workshops:

Meetings in 2017-19 will be arranged on the basis of one per year free standing and one per year attached to EPSC. The following meetings are in place:

- 2018 H2061 Tech Foresight, Lausanne Jan 2018
- IwIPM4 Berlin Sept 2018

The following topics have been proposed:

- Planetary Robotics
- Large Planetary Telescopes
- New detector technologies
- Nuclear generators for power and thermal control
- Low cost systems (cube sta., penetrators,...)
- Geographic Information System
- Space weather and radiation design
- Advanced fabrication techniques
- Propulsion techniques (solar sail, RTG, ...)
- 2017 Planetary Environment models
- 2017 Planetary Exploration 2061
- Future instruments and methods in planetology
- Future mission concepts to Outer planets:

- Preparing sample returns and their analysis (including meteorite analysis).

We will carry out as funding permits. Meetings will be co-sponsored where possible in order to maximise impact and cost effectiveness. Workshops will also be co-located with EPSC. The list of all past and future Workshops can be seen on the NA1 web site.

9.2.5. WP 12.5

Extensions of the ground-based observatories database

The extension of the so-called NA1-Matrix (see <http://iwf.oeaw.ac.at/matrix/>) started in project year 2 in cooperation with the Virtual Observatory VESPA based on discussions, which took place during project year 1. The foreseen extension will give amateurs the opportunity to upload their own data directly into the database and therefore making it available via the VESPA interface. In addition, changes of the NA1-Matrix user interface are currently implemented to make the database compatible to be included into a so-called list of observatories, which is currently also implemented by OEAW to serve as observatory name resolver for the VESPA Virtual Observatory.

NA1-Task 5 Workshop organisation

During the second project year of Europlanet 2020 NA1-Task 5 organised and supported 3 workshops, of which one was an amateur training workshop / summer school. These 3 workshops are:

- “8th International Workshop on Planetary, Solar, and Heliospheric Radio Emissions (PRE 8)”, October 25-27, 2016, Seggau near Graz, Austria. 50 participants, among them 10 female (20%) and 15 students and/or young scientists (30%). 5 participants came from so-called inclusiveness countries, 10 participants from so-called under-represented countries. The dedicated workshop website can be found at <http://pre8.oeaw.ac.at/>. This also hosts the announcement, a detailed abstract book, photos and information on the upcoming Proceedings Book of the workshop. A press release about the workshop was released and e.g. covered by the Austrian Press Agency. The workshop, which was already the 8th in a long-lasting series of workshops, will culminate in a Proceedings Book, which is currently under preparation and will be published in 2018. A detailed report on the workshop can be found at <http://tinyurl.com/pre8-report>. This workshop was supported by NA1-Task 5 with 2,500 Euro.
- Workshop “Pic du Midi T1M planets observation campaigns”, June 09-12, 2017, Observatoire du Pic du Midi, France. 5 participants, among them 4 amateur astronomers and 1 participant from an inclusiveness country. The dedicated workshop website can be found at <http://pic-net.org>. This website also hosts announcement, agenda, participants, and outcomes of the workshop. Observations are also available via the observatory database PVOL2 (<http://pvol2.ehu.eus>), which is also available via the Virtual Observatory of VESPA. The coverage on media and internet was high, due to the excellent quality of the images produced during the workshop: Sky & Telescope, the French journal “Le Monde” and many astronomical blogs (Dan Fisher’s and many others) published short articles about the outcome of

the first Pic-Net workshop. One Saturn image made the Astronomy Picture of the Day on June 17, 2017. In addition, a press release was prepared by the Media Centre of Europlanet 2020. A detailed report of the workshop can be found at <http://tinyurl.com/picnet-report>. This workshop was supported by NA1-Task 5 with 3,500 Euro.

- “Europlanet Summer School 2017: Space missions: ground-based observations and science communication”, July 18-28, 2017, Molėtai Astronomical Observatory, Molėtai, Lithuania. 21 participants, i.e. students and amateur astronomers, of whom 11 came from inclusiveness countries. The dedicated workshop website can be found at <http://mao.tfai.vu.lt/europlanet2017>. This website also hosts announcement, agenda, participants, as well as a poster for dissemination. The summer school, which was organized by NA1-Task 5 in cooperation with the Public Outreach team of NA2, was accompanied by dissemination activities on social media and a very good media coverage, in particular in the hosting country Lithuania. In addition, a press release was prepared by the participants and distributed via the Media Centre of Europlanet 2020. The press release can be found at <http://tinyurl.com/school2017pr>; a short report can be found at <https://www.europlanet-eu.org/europlanet-summer-schools-2017-reports>. In addition, a presentation on the participant’s feedback as gathered with the by NA1-Task 5 developed feedback form can be found online at http://www.europlanet-eu.org/wp-content/uploads/2017/07/Evaluation_Europlanet_Summer_School-2017_Summary.pdf. This Summer School was supported by NA1-Task 5 with 10,000 €.

Besides the organisation of these 3 workshops, NA1-Task 5 is already organizing further workshops, which will take place during project year 3, among them a workshop on ‘New Views of Jupiter: Pro-Am Collaborations during and beyond the NASA Juno Mission’, which will take place in London, May 10-11, 2018, a PSWS/NA1 workshop on “Tools and Services for Planetary Observations and Image Analysis by Amateurs”, which will probably take place in October in Toulouse, France, and a workshop in support of the joint proposed ESA/NASA mission AIDA, most probably taking place in spring 2018.

NA1-Task 5 Alpbach Summer School Support

In addition to these 3 workshops / summer schools, NA1-Task 5 in cooperation with NA1-Task 2 also supported the Alpbach Summer School 2017, which is one of the most well-known and appreciated summer schools in Europe with a very long lasting tradition. Aim of this funding was the support of participants from inclusiveness countries, who would otherwise not have the possibility to participate in Alpbach. Following further information:

- “Summer School Alpbach 2017, The Dusty Universe”, July 18-27, 2017, Alpbach/Tyrol, Austria. NA1-Task 2 & 5 each supported 4 students (8 total) from inclusiveness countries. The dedicated workshop website can be found at <http://www.summerschoolalpbach.at/>. This website hosts information on the summer school, including program, presentations and reports. It received excellent media coverage, e.g. ESA hosted an article dedicated to the summer school on its website. A short report, including a dedicated group photo with all participants

funded by Europlanet, can be found online at <https://www.europlanet-eu.org/europlanet-summer-schools-2017-reports/>. This also includes a statement of one of the funded students, i.e. *“I’d like to personally thank [Europlanet] for having me over at this amazing academic gathering. This was a congregation like nothing I had ever experienced before. I learned a great deal about the space mission industry from the lectures and from the discussions with the other students when we worked on our projects. While pursuing my dream to become an aerospace engineer is not new, thanks to the Summer School it just got infused with a whole new level of knowledge and enthusiasm. Thanks to my tutors and my peers, I am more confident than ever that I have chosen the right path in pursuing my passion for aerospace engineering and spacecraft design.”* This summer school was funded by NA1-Task 5 with 4,000 Euro.

Organisation of Amateur Sessions at EPSC 2017, Riga, Lithuania

Already within project year 1 NA1-Task 5 established very good connections to the amateur community in Europe. Several discussions with amateurs and the Planetary Sciences community led to the idea to support amateurs to participate in the upcoming EPSC 2017 in Riga, Latvia, since they can contribute substantially to the research in Planetary Sciences, but by now do not have the possibility to receive funding for presenting their impressive work and to collaborate adequately with professional scientists in Europe. As a result of these discussions NA1-Task 5 is now organizing and supporting two dedicated Amateur Sessions at EPSC 2017, i.e.

- Amateur collaborations in small bodies, terrestrial, giant and exoplanets professional studies, oral and poster session, further information can be found online at <http://meetingorganizer.copernicus.org/EPSC2017/session/26126>
- Juno Ground-based Support from Amateurs, oral and poster sessions, further information can be found online at <http://meetingorganizer.copernicus.org/EPSC2017/session/26127>

NA1-Task 5 will dedicate a funding of 15,000 Euro for amateurs to participate at these sessions. Abstract submission has shown that due to this funding possibility this year’s EPSC will be the conference with the biggest amount of participants from the amateur community so far. In view of that, NA1-Task 5 is planning to most probably also dedicate some budget to the support of amateur participations at EPSC 2018 in Berlin, Germany.

Regular communication within NA1-Task 5

During the second project year regular communications between the beneficiaries of NA1-Task 5 took place. This includes an informal discussion meeting at the Europlanet Council Meeting in Milton Keynes, November 2016 and regular and frequent telecons between Vilnius University and IWF-Graz to coordinate the work within NA1-Task 5. In addition, continuous communication with some of the leading amateur astronomers in Europe took place during project year 2 of Europlanet 2020.

9.2.6. WP 12.6

During reporting period of 01.09.2016 - 31.08.2017 the following calls were opened and applications received in NA1 Exchange Program (Task 6):

Standard **call 3** with period of visit 1.10.2016-28.2.2017, application deadline 30.9.2016

- 1 application was received and approved:
 - From Wigner Research Center for Physics, Hungary, to CNRS, France, purpose: *"Solar wind propagation and effect on planetary atmospheres"*

Special call to support participation in IPPW-14 workshop (12.-16.6.2017, Hague, The Netherlands), application deadline 31.3.2017

- 7 applications were received and approved. The applicants were from France, Finland (x2), Italy, Germany and Greece (x2)

Standard **call 4** with period of visit 1.6.2017-30.11.2017, application deadline 14.6.2017

- 3 applications were received and approved:
 - From Faculty of Mining and Geology, Serbia, to Open University, UK, purpose: *"Meteorite thin-section preparation and Virtual Microscope images acquisition"*
 - From Finnish Meteorological Institute to University of Michigan, USA, purpose: *"Comparative humidity measurements in low-pressure carbon dioxide"*
 - From University of Kiel, Germany to Aberystwyth University, UK, purpose: *"Implementation of the Martian part of the Europlanet Planetary Space Weather Service VI"*

Special call for Journalists/Science communicators to visit Europanet Institutes and Laboratories, period of visit 15.8.2017 - 15.2.2018, application deadline 31.8.2017, priority given to Inclusiveness countries.

- The following laboratories are available to receive visitors
 - IWF Graz, Austria
 - IRAP, France
 - IASA, Greece
 - The Open University, UK
 - University College London

The call is currently still open.

9.3. Impact

The WP12 has been able ramp-up its activity and started successfully its operations. Through NA1 meetings and topical workshops we have been able to make a difference by bringing together European planetary scientists, engineers, and amateurs, as well as approached successfully industrial organizations. A specific effort has been made to activate the inclusiveness states.

The results and impacts will be taken into account in the planning of the third year of the NA1 activity.

At the Europlanet Impact and Innovation Board the NA1 activity are represented by the NA1 Coordination team or individual Task leaders or their deputies.

The first ISSI-Europlanet workshop result was presented at **NASA's "Planetary Science Vision 2050" workshop, (February 27–March 1, 2017, NASA Headquarters, Washington DC.)**

This workshop provided a very long-range vision of what planetary science may look like in the future. The PSV 2050 report :

- has a compelling, over-arching planetary science theme for each decade as the next phase in Solar System Exploration;
- contain one or multiple paths forward (science areas and technologies needed) towards a long-range vision;
- consider cross-cutting opportunities with other disciplines as well as the larger context of international planetary science and human exploration;
- be built on science investigations goals, leading to notional missions that achieve the science as appropriate;
- consider the technology needed to achieve specific goals;
- identify challenges (e.g. measurement challenges, technology challenges....) that will need early investment to become viable.

The next **International Workshop on Instrumentation for Planetary Missions IWIPM-4** previously all held in the USA will take place in Sept 2018, collocated with **EPSC**.

The NA1 one has already made a distinctive impact on the planetary science community in bringing together planetary scientists and industrial/commercial companies, people from inclusiveness states, amateur organizations and early career scientists. Principal statistical data on the NA1 impact can be seen in the Table below.

Table 1. Statistical data on the NA1 impact.

Year	from	to	Workshop Title	City	Country	held in inclusiveness target country	Total number of participants	Number of participants of Inclusiveness states	Number of early career scientists	Participants from Industry	Amateur Participants	Participants from outside Europe
2016	7.6.	9.6.	Mars 3D	Dorking	United Kingdom	no	23	5	23	1	0	4
2016	1.12.	3.12.	Ethiopia (Danakil Depression in Planetary Science)	Bologna	Italy	no	20	0	2	2	2	2
2016	12.9.	13.9.	ISSI forum 1: Solar system exploration	Bern	Switzerland	no	45	1	4	5	0	11
2016	21.1.		Eurospace meeting	Paris	France	no						
2016	26.4.	28.4.	Eurospace meeting	Lausanne	Switzerland	no						
2016	21.9.	22.9.	Asteroid mining	Luxembourg	Luxembourg	yes	79	13	19	21	1	16
2016	24.10.	27.10.	IWIPM-3	Pasadena	USA	no						
2016	14.11.	18.11.	Space weather and radiation design (in conjunction with PSWS).	Oostende	Belgium	no						
2016	11.5.	13.5.	Ground-based	Nice	France	no	33	4	0	0	22	5

			observations in support of the JUNO mission to Jupiter									
2016	20.6.	22.6.	Rosetta ground-based observations	Seggau	Austria	no	40	0	8	0	2	14
2016	2.8.	12.8.	Exoplanets	Moletai	Lithuania	yes	45	31	17	0	13	0
2016	25.10.	27.10.	Planetary Radio Emissions VIII	Seggau	Austria	no	50	5	13	0	0	18
2017	20.3.	24.3.	Dynamics of planetary systems (Alexander von Humboldt Symposium)	Bad Gastein Salzburg	Austria	no	50	12	10	2	3	6
2017	26.3.	30.3.	Exomars Atmospheric Science and Missions Workshop	Saariselkä	Finland	no	22	1	3	0	0	2
2017	19.4	21.4	Planetary mapping through Virtual Observatory	Roscoff	France	no	30	0	9	2	0	2

2017	19.6.	23.6.	Comets Formation	Sofia	Bulgaria	Yes	53	6	5	0	0	4
2017	18.7.	28.7.	Alpbach Summer school	Alpbach	Austria	No	60	8	60			
2017	24.7.	26.7.	5 th CHEOPS science workshop	Seggau	Austria	No	89	10	17	1	0	8
2017	8.8.	10.8.	Early history of planetary systems and habitable planets	Tartu	Estonia	Yes	50					
2017												

Overall (informed) 620 participants, 84 of them from the inclusiveness countries (13,5% of all participants). 178 early career scientist (28.7% of all participants), 27 (4.4% of all participants) from the industry and 38 amateurs (6% of all participants). 84 participants were outside the EU (13.5% of all participants). All together there were 19 workshops and/or meetings, 4 of them were organized in inclusiveness countries (21% of all workshops).

APPENDIX 1: THE INVOLVEMENT OF THE INCLUSIVENESS COUNTRIES INTO EPN-2020

- **1.1 Objectives**
- Our main objective is to integrate more and more scientists and industrial representatives from under represented countries. Seeing the last period's result, that TA calls were more successful among inclusiveness states than exchange programs, the main focus during this period was on researchers.
- Having a wider, less homogeneous scientific community will boost competition and scientific results. Expanding the European concept to the Eastern parts can also increase cost effectiveness.

- **1.2 Explanation of the work carried per WP**
- There was no big change in the working plan, we still use the formerly described 2-way method consisting of both advertising and brainstorming activities. It includes getting in touch with as many scientists as possible and draw their attention to our program. This is the difficult part from our side, as we have to overcome a kind of potential barrier in order to really get the attention of the targeted people.
- The second part of our work includes discussions, brainstorming with these people, identifying their needs and working out how they can be helped in a sustainable way.
- To get the attention of the people works basically only if we already have a contact in the given country. If we have a person known by both parties, we are taken more seriously, the chance that our email does not end up in the spam folder is much higher. This way the ratio of received answers and contacted people has risen drastically.
- We stopped however advertising the previously established mailing list of inclusiveness scientists and keep the list of people and email addresses ourselves. The reason for this, is that some people had difficulty with signing up. It also represented a barrier to the target group as people are simply reluctant to subscribe to any more mailing lists and probably are afraid of receiving too many junk emails.
- The EPSC conference held in Riga, Latvia will be a very good occasion to further advertise the project. We are organizing a lunch debate for inclusiveness participants concerning how we could facilitate their integration. We are also offering limited funds for the travel costs of inclusiveness participants.

- **1.2 b Deliverables-** Summarise the Deliverables submitted under your WP.
- The number of successful Inclusiveness applicants (PI&PL) to the call of TA program: 7 (out of 138)
- The number of supported summer school students in 60: 8 students from 5 countries (out of 60 students)