

03 October 2017

Hello all,

European Planetary Science Congress 2017 Riga Wrap-up, October 3.

I've been told by the scientists that the EPSC 2017 Riga was successful, I know at least the Local Organizing was (my part). The talks were interesting and useful, at least what I picked up on Twitter, because I didn't have time myself to attend the sessions that I didn't organize.

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Participation Outcome:  
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We had 808 participants from 40 countries. It was the largest single EPSC showing since the EPSC 2012 London meeting, and the largest number of countries, ever. There were 80 Latvians attending with the numbers from Finland, Estonia and Lithuania larger than usual too. We even had the Space Affairs lead from the Luxembourg Ministry of the Economy speaking (Mathias Link's talk was recorded), so tiny Luxembourg made a showing at the EPSC 2017 too.

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Professional Collaborations:  
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800 'Baltics Space Facilities: Competencies' booklets were distributed to the EPSC 2017 Riga participants. I have the remaining 200 in hand.

(what I know from my side, I'd like to collect others if you know) Baltics in Space (BIS, me) facilitated four (\*) conversations for future collaborations between Baltic space workers and the international planetary science community.

BIS connected two others for information-gathering purposes (\*\*).

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Second Floor Exhibits  
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The Professional (Finnish Meteorological Institute-FMI, LIAA Latvian Space, plus a Finnish and Latvian company) and Cultural-Science (RIXC and Moletai Ethnocosmological) Exhibits on the conference floor were informative and beautiful, filling the space we had, tastefully. The LMT 100-km rocket exhibit was

perfect between the two largest conference rooms. Even Madame President took a photo there (see Twitter feed).

Harri Haukka and Maria Genzer from FMI became the Exhibit Managers in the summer. The second floor was so tastefully laid out because of them.

Some views here:

<https://www.facebook.com/EPSC2017LOC/posts/475816276124940> See also the Twitter feed in Storify: FMI kept people informed on Twitter.

More photos coming soon when I collect them!

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Planetary Science:  
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The 1000 EPSC 2017 Riga abstracts are available here:  
<https://www.epsc2017.eu/>

Go to the left panel and select one of the ways to browse.

For example a session.

<https://meetingorganizer.copernicus.org/EPSC2017/sessionprogramme>

Then you select a 'program group', such as Missions.

For example, the asteroid mining session (I was convener) is here.

[http://meetingorganizer.copernicus.org/EPSC2017/oral\\_programme/26072](http://meetingorganizer.copernicus.org/EPSC2017/oral_programme/26072)

Some people are uploading their presentations already.

For example, JL Galache and I put the White paper presentation there, you can see the link to it.

Planetary Science Stories:

See the 'For science + stories:' bottom of this email message.

Twitter EPSC 2017 Planetary Science

I've collected a bit of social media materials for the EPSC 2017 Riga via Storify. As you know, good science is presented on Twitter via hashtags (ours was #EPSC2017) so that is included here too. As we had six rooms of talks and one camera crew (Latvia Mobile Telephone), 5/6 of the science was not streamed/archived. But we picked up a bit of that by the Twitteratti.

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Press:  
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There was a large international and local press following, Europlanet and I are still collecting the press pieces. During the week, there were eight official Europlanet press releases plus the announcement of the Farinella Prize, plus the two press conferences.

- 1) Lava tubes: the hidden sites for future human habitats on the Moon and Mars. <https://goo.gl/ESKSkC>
- 2) Crash Scene Investigation reveals resting place of SMART-1 impact. <https://goo.gl/aYsuRY>
- 3) Solar eruption photobombed Mars encounter with Comet Siding Spring. <https://goo.gl/Wvqexu>
- 4) What do we need to know to mine an asteroid? <https://goo.gl/kSZcjG>
- 5) Nanosat fleet proposed for voyage to 300 asteroids. <https://goo.gl/b77HCn>
- 6) Size matters in the detection of exoplanet atmospheres. <https://goo.gl/qqMXq5>
- 7) Devilish source of dust in atmosphere of Earth and Mars. <https://goo.gl/fdehbB>
- 8) Studies of Crater Capital in the Baltics show impactful history. <https://goo.gl/1DL5au>
- 9) 2017 Farinella Prize Awarded to Simone Marchi. <https://goo.gl/nMN4xd>

We also had around 20 journalists on site, including from the AFP and DPA press associations.

We are still only in the early stages of gathering the international coverage, but this includes The Economist, The Sunday Times (UK), The Sun (UK), The Daily Mail, The Hindu, Sciences et Avenir, Focus.it, Spektrum.de, Sueddeutsche Zeitung, Forschung aktuell Deutschlandfunk, ABC.es, CBC Radio, The Japan Times, T=C3=A4hdet ja avaruus, Sky at Night Magazine, Gizmodo, IFLScience, Yahoo! News, Engadget, Popular Mechanics... the list is still growing. We will liaise with Deep White and LMT on the Latvian coverage and hope to produce a full report later this month.

The press briefings were recorded, thanks to Livia Giacomini. You can see them here, but they still need to be edited as there is a few minutes of dead time at the beginnings:

Press Conference 1: <https://goo.gl/C12VgP>

Press Conference 2: <https://goo.gl/QEJw4P>

Thilina Heenatigala, Europlanet's social media manger, filmed a number of 1-minute videos of participants at the conference that he will be releasing on social media over the coming weeks.

I counted about 8 Latvian press pieces. one more by Diena-Sestdiena should appear this weekend, and Zvaigznota Debess will have one about the conference within 1-2 months.

Europlanet Press' Highlights of the EPSC 2017 Riga

<https://goo.gl/EQ9r5c>

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Policy Communication:  
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Our Estonian politician/astrophysicist ally Ene Ergma met with her colleague in the Latvian Parliament, now we are mapping a path forward to have space be better supported in Latvia.

The local Latvian government was very supportive; they were talking to me in very colloquial and friendly ways during those days.

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Local Businesses  
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The local food businesses had booming business too. My recommended restaurant Google Map that I provided the EPSC (first time that the EPSC gave participants recommended restaurants) showed 501 accesses during the conference week.

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Costs  
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Some Latvians responding in comments to the Latvian press pieces asked why was the government spending 'millions' on that EPSC conference and asked for a complete financial breakdown. So, I did. The total cost was a few percent of the

'millions' with the largest financial burden for the Local Organizing carried by one person (me), who wrote all of those project proposals and whose time was underpaid by 50%. That means that the conference looked very professional. :-)

The LOC (Local Organizing Committee) was initially given 0 Eur. The reason is that the EPSC LOC was not listed for funds in the European Commission Europlanet grant agreement. Instead, the EPSC 2017 Riga EC funds went to the scientific abstract and registration and hotel organizing (company: Copernicus Meetings).

I didn't ask the rest of the LOC members to donate their free time beyond immediate 'Space Booklet' and Space Exhibit roles. As soft money scientists like me with no official paid 'EPSC project', I felt that their family sacrifices would be too great and for something that they had no previous knowledge about.

I formed 'Baltics in Space' nonprofit last Winter to be the official vehicle to carry my legal/financial EPSC 2017 Riga LOC work, and to provide Baltic space support in all of the ways that I cannot at the Univ of Latvia. We have 3 members besides me (Imants Kins, Anna Reynolde, Pauls Irbins) and future plans larger than the EPSC 2017 Riga.

After my 15-part LOC development, the total LOC costs were about 100K, 75K were in-kind contributions, 25K was my own costs, of which donations (Finnish Meteorological Institute, Planetary Science Institute, plus 53 individuals in my two crowd-funding campaigns) covered 12K of my costs. I lost my only credit card in the EPSC experience. My financial recovery needs some time.

My largest lessons learned for proper funded LOC support: We needed two years, not 1.5 years, for proper fund-raising and project proposal writing with both business and government supporters. The sponsorship support would have worked better by engaging the companies first before the governments in my project proposals.

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Opening and Keynote Speakers arranged by Amara

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Opening Speakers

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Number 1. Our Madame President : Vaira Vīķe-Freiberga entered the hotel through a way that I did not see. I waited for her at the bottom of the circular stairs as we agreed, but she didn't appear. At 5 minutes before 9am, I ran up to the Jupiter room and started to tell Manuel Grande that we had a problem with not having our speaker. "Maybe there were transportation problems in the rain",

I said. Just as Manuel said that 'he would put in the other speakers while we were waiting', there she was, at my shoulder.

And VVF proceeded to give an interesting talk about folklore, the sun in the dainas and how science works like metaphors. Recorded here.

<https://goo.gl/fSRTiU>

Number 2: Our Estonian politician / astrophysicist : Ene Ergma was present from early morning on Monday, was wonderfully open and communicative from the beginning and stayed the first two days talking with everyone.

I talk after the Europlanet manger: Nigel Mason, about the LOC, recorded too.

All of the EPSC 2017 Opening talks: <https://goo.gl/DZZdff>

#### Tuesday Keynote Speakers

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The Tuesday 9am talk by the Luxembourg Ministry of the Economy Space Affairs lead Mathias Link was on time, a great talk and recorded. <https://goo.gl/6H2sy6>

The Tuesday 12:30 talk by the Latvian Finance Minister Dana Reizniece-Ozola was made barely on time due to her Ministerial meeting all morning, which was running late. I will never forget seeing her from the Radisson Blu wide windows running alone in the rain to make her talk. It was an excellent talk. The Finance Minister's talk was recorded too (and carred broadly by local media).

<https://goo.gl/r445gY>

#### Thursday Evening Key Speakers

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The Latvian Minister of Education and Science spoke on the night of the Public Event before our Roundtable key speakers, see 'Public Event' below.


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Education:  
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I put Baltic young into every niche available to me.

#### Kids Exhibits

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The 'Solar System for Kids' Exhibit below the main conference floor was visited by about 600 kids during the week. There were two contributions to the Zinoo

A horizontal bar with a rainbow gradient from red on the left to purple on the right, with small colored squares at the ends.

products: An excellent meteorite display by Meteoriti.lv and spherical projector: 'Planets in a Room' by (Italian company) Science Speaks. We could hear the kids' squeals of delight from below (connected by an easy escalator). The scientists referred to the Mars rover exhibit in the Public Event recorded talk and was referred to on Twitter (see the Storify stories below).

The Zinoo exhibits, designed to be portable, will be shown at consecutive Zinoo science centers in the next year-few. As there are five Zinoo centers in Latvia, we expect to reach 10,000+ kids, even in the Latvian countryside.

[https://www.facebook.com/pg/EPSC2017LOC/photos/?tab=album&album\\_id=472415156465052](https://www.facebook.com/pg/EPSC2017LOC/photos/?tab=album&album_id=472415156465052)

and

<https://www.facebook.com/amara.graps/posts/10155835676964124>

Space Interns participated and presented

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The Estonian and Latvian young of the Interreg SpaceTEM project were deeply involved, with one of our Univ of Latvia team winning an EPSC 2017 Early Career Poster for their results.

<https://www.facebook.com/EPSC2017LOC/posts/475162636190304>

Baltic Copernicus workers

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There was a crew of Latvian and Estonian (paid) space enthusiast workers for Copernicus Meetings who are space enthusiasts. Some of them seen here:

<https://www.facebook.com/EPSC2017LOC/posts/475156812857553>

Public Event

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There was one Public Event I organized that turned out successfully at the end, after months of a Saga. It is a very interesting and engaging topic for young and old.

The title: "Moon, Mars, and Beyond?" topic was a roundtable discussion of what is the role of the astronauts in the entrepreneurial New Space/ Space 4.0 (ESA parlance). We had an ESA manager, a Rocket project manager and a New Space worker talking. <https://goo.gl/ZfdyZG>

We didn't have the Latvian-teenagers audience we expected (see the Saga), but we have a recording of an important topic, which we can continue to show to the young everywhere, in Latvia and outside.

The Minister of Education introduction is 15 min in Latvian, with the rest of the roundtable in English.

More about the Public Event topic (the Why?)

<https://www.facebook.com/amara.graps/posts/10155840706299124>

and my own Saga for building this topic. It shows the difficulty of working with large governmental organizations.

<https://www.facebook.com/amara.graps/posts/10155829658934124>

Recording for Education

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LMT streamed/archived 105 talks of the 650 total talks. See the challenge of the streaming here:

<https://www.facebook.com/EPSC2017LOC/posts/474489032924331>

The Latvia Mobile Telephone (LMT) stream: <https://goo.gl/txDQT2>

I've attached a graphic that shows what was recorded on the Stream. See the Storify below for science info in Twitter. I embedded the links to the LMT recorded sessions inside of the Storify timelines.

My next task is to select about 30 of those 105 talks, into a collection to be called: "What's Wild in the Worlds of Planetary Science?" to inspire the young, contemplating going into planetary science.

Important Note:

No EPSC host city prior to Riga had provided streaming to the international community before. A tiny Baltic country with almost no planetary science has provided a valuable resource for the international planetary space community that will be remembered and referred to often in the next few years. LMT is informed of this fact.

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For Science + Stories:  
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Good science reporting.

Here's the EPSC 2017 Riga 'Story' so far in Storify, emphasis on the 3200 posts on Twitter:

Pre-EPSC (before 17 September 2017): <https://goo.gl/VFQsfK>

Sun-Tues 17-19 September 2017: <https://goo.gl/iYyrj6>

Wed-Thur 20-21 September 2017 : <https://goo.gl/Bmh8p9>



Friday 22 September 2017: <https://goo.gl/GNvjG1>

Post-EPSC (after 22 September 2017): <https://goo.gl/iBSy hv>

There is more integrations to come with my FB albums plus the official press releases

In addition to this wrap up, I have an EPSC 2017 Riga 'Engagement' European Commission Latvia report due on October 15.

So final final wrap up will have from me by end of October:

- a larger press summary with Latvian press
- my EC report, which will include details of all Local Organizing costs (100 KEur, 15 parts)
- selection of talks: 'What's Wild in the Worlds of Planetary Science'

Professional Collaborations, References.

(\*) Valuable discussions

1) I brought 2 European Space Agency (ESA) and 2 key Ventspils Int'l Radio Astronomical Center (VIRAC) people together to talk about VIRAC planetary science (of small watery bodies) observations. This involved my/ESAs proposal that was evaluated by them 1.5 years ago, and which needed more technical information which I couldn't provide. Finally the VIRAC people had the technical information, and at the EPSC Riga, they talked how to go forward with the European Space Agency.

2) BIS played a key role in helping the Ukraine Kharkiv polarimetry group make it to the EPSC. BIS was a conduit to provide travel funding from an American Astronomical Society donation and BIS inserted Ukraine into Europlanet bursory countries for additional travel funding support for that group. The polarimetry astronomers met Baldone Observatory director and talked about polarimetry and more. Polarimetry observations are the one way to bring the Baldone telescope into the New Space arena of work.

3) Tartu's Mart Noorma had a fruitful discussion with Luxembourg's Mathias Link about a particular asteroid mining capacity which he thinks the Luxembourg government would be interested in.

4) The ESA Mars Express ESA Principal Investigator Dmitri Titov met privately with Latvian geoscientists (names recommended by Juris Zhagars, who remembers him from way back!) to involve the Latvians for Mars data analysis.

(\*\*) Information gathering

1) Johns Hopkins scientists: Ralph Lorenze and Zibi Turtle had a private professional tour of the Ventspils International Radio Astronomical Center by the staff there during the EPSC week after info and connections by BIS.

2) Lucas Ellerbroek visited the University of Latvia Candors Spaceflight Museum while at the EPSC to gather additional information about Candors for his Candors chapter about space visionaries.

Sincerely,  
Amara Graps

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