CSILLA ORGEL

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CURRICULUM VITAE

SUMMARY OF QUALIFICATIONS

As a planetary geologist I gained experience in various topics in extensive international collaborations: periglacial, glacial and water-related processes on Mars, age determination of planetary surfaces, lunar chronology, stratigraphy of large impact basins on the Moon and Mercury, comparative planetology, landing site studies for ISECG-GER, Chang'e-4, ExoMars 2020 rover, and Mars/Moon mission simulations. I am a remote sensing expert and used data from several orbiters: Mars Reconnaissance Orbiter, Mars Express, Mars Global Surveyor, Lunar Reconnaissance Orbiter, Kaguya, Chandrayaan, and MESSENGER.

Outstanding communication skills: Presented original research at numerous international conferences, workshops and team meetings. Lead author of three, and contributing author of over ten papers published in high-impact, refereed scientific journals. I speak Hungarian (mother tongue), English (full professional working efficiency), German (full professional working efficiency) and French (limited).

Strong technical skills: Experienced in use of ArcGIS for geologic mapping, quantitative analysis, and data analysis. Other software experiences: Craterstats 2.0 (excellent), ISIS (good), MatLab (good), Adobe Applications (good), CorelDraw Graphic Suite (good), and ENVI (limited).

PROFESSIONAL EXPERIENCE AND INTERNSHIPS

2018 *NASA Marshall Space Flight Center*
Apr. – May. Planetary Sciences Division
Visiting Scholar/Graduate Student Intern

- *Reinvestigation of the impactor populations on Mercury:* Studied the population, stratigraphy, and newly discovered Mercurian basins as well as compared the early impactor history with the Moon. Project resulted in 2 abstracts, 1 poster and 1 first-author peer-reviewed publication *in prep*. Supervisor: Dr. Caleb Fassett

2017 Oct. – Nov. *Westfälische Wilhelms-Universität Münster (University of Münster)*
Planetary Sciences Group
Visiting Scholar/Graduate Student Intern

- *Characterization of high-priority landing sites*: Characterization of former primary landing site for Chang'e-4 in Apollo basin on the Moon. Used variety of optical, topographic, thermal and spectral datasets from Lunar Reconnaissance Orbiter, Kaguya, and Chandrayaan. Investigated science potential (geologic mapping, estimation of regolith thickness and stratigraphy, absolute model age, ISRU potential, NRC (2007) scientific objectives) and hazards (boulders, crater density, terrain) at 3 candidate landing sites. Project resulted in 1 co-authored peer-reviewed publication, 3 abstracts, 2 talks (incl. invitation to present at the Lunar Reconnaissance Orbiter Camera team meeting in 2018), 2 posters and 1 first-author peer-reviewed publication *in prep*. Supervisors: Prof. Dr. Harald Hiesinger, Dr. Mikhail Ivanov, Dr. Carolyn van der Bogert

2014 – now *Freie Universität Berlin (Free University Berlin)*
Planetary Sciences and Remote Sensing Group, Berlin, Germany
2017 – now **Research Assistant**
Project: ESA ExoMars 2020 (internal)

- *Analysis of Mawrth Vallis candidate landing site for ESA ExoMars 2020 rover*. Studied crater densities as hazards and scientifically valuable targets, characterized high-priority science targets, and participated in mission simulation (Rapid Reconnaissance Mapping). The project resulted in 2 reports, 1 abstract and 2 talks.

2016 – now **Research Assistant**
Project: Late Accretion onto Terrestial Planets, TRR-170-A3/German Research Foundation

- *Re-examination of the population, stratigraphy, and sequence of Mercurian basins*: Details above in internship at NASA Marshall Space Flight Center.
- *Characterization of high-priority landing sites* for the Chang'e-4 exploration mission in the Apollo basin, Moon. Details above in internship at Westfälische Wilhelms-Universität in Münster.
- S*tudent representative (since 2017)*. Organization of internal workshops and participation in Executive Board Member meetings to represent the interest of graduate students in the project.
- *Reinvestigation of the impactor populations on the Moon*: Studied the crater size-frequency distribution (CSFD) and absolute model age of 30 large, lunar basins to re-investigate the question of Late-Heavy Bombardment using a new, more sofisticated CSFD technique. Project resulted in 1 first-author peer-reviewed publication, 1 co-authored peer-reviewed publication, 6 abstracts, 5 talks (incl. invitation to present at the Lunar Reconnaissance Orbiter Camera team meeting in 2017) and 2 posters. Supervisors: Dr. Greg Michael, Prof. Dr. Harry Hiesinger, Dr. Carolyn van der Bogert.

2014 – 2016 Feb. Apr. **M.Sc. Intern**

- Studied periglacial/glacial landscape evolution of debris aprons at the mid-latitudes of Mars (eastern Hellas Basin, Erebus Montes, Phlegra Montes). Used optical, thermal and topography datasets from Mars Express, Mars Reconnaissance Orbiter and Mars Global Surveyor. Performed geologic mapping, estimated absolute model

age, performed quantitative analysis, and updated a landscape evolution model. Work resulted in 10 abstracts, 3 talks, 2 posters and my M.Sc. thesis. Supervisor: Prof. Dr. Stephan van Gasselt

2016 *Lunar and Planetary Institute,* Universities Space Research Association
May. – July. CLSE 2016 Exploration Science Summer Intern Program, Supervisor: Dr. David Kring
Graduate Student Intern

- I was an exploration science summer intern to work on the project "*Traverse Design for Phase 2 of' eDSH Enabled Lunar Missions Being Examined as an ISECG GER Mission Scenario*". The proposed subsequent human missions to the Lunar surface focus on the south polar region and target five sites of diverse scientific interest. Participated in designing (i) traverses in the vicinity of each landing sites (Malapert Massif, South Pole/Shackleton Crater, Schrödinger Basin, Antoniadi Crater, South Pole-Aitken Basin center) for 2 x 14-day missions, and (ii) tele-robotic operation of traverses between these landing sites. Demonstrated that most of the National Research Council (2007) scientific objectives and goals can be achieved at these landing sites.
  The internship resulted in 1 co-authored peer-reviewed publication, report and final briefing to NASA HQ, 4 abstracts, 1 talk, and 4 posters.

2014 – 2015 *Deutsches Zentrum für Luft und Raumfahrt (DLR),* ERASMUS Training Program
Feb. Mar. Institut für Planetenforschung, Berlin, Germany, Supervisor: Ernst Hauber
M.Sc. Intern

- I worked on the project of the International Space Science Institute, Switzerland: "*Mapping the northern plains of Mars: origins, evolution and response to climate change"*. Co-lead one of the sub-teams to study small-scale ice and water-related features with a new, grid-mapping technique in Acidalia Planitia. Used optical, topographic, radar and neutron datasets. This project resulted in 1 first-author peer-reviewed publication, 3 co-authored peer-reviewed publications, 10 abstracts, and 2 posters.
- As a side project, I studied the evolution and distribution of mud volcanoes, thumbprint terrain and giant polygons in the northern lowlands of Mars focusing on the Acidalia Planitia region. Mapped the distribution of these features, and performed spatial analysis. This side project resulted in a co-authored peer-reviewed publication, a peer-reviewed publication (*in prep.*), 2 abstracts, and 2 posters.

2014 *Alpbach Summer School***,** organised by FFG and co-sponsored by ESA
15 – 24 July, Alpbach, Austria

- I was a selected participant in a team composed of science and engineering students to plan a geophysics focused robotic mission (Aphrodite) to Venus, including trajectory calculations, mass, instrument design, budget calculation and science objectives. Worked on the science objectives and instrumentation of the mission. This summer school project resulted in a report, final briefing to ESA representatives, and won the competitiveness prize.

2013 *Hungarian Academy of Sciences*
Nov. – Dec. Research Centre for Astronomy and Earth Sciences, Budapest, Hungary. Mentor: Dr. Akos Kereszturi
M.Sc. Intern

- I collected geochemical data of the NWA 4964 meteorite. Gained experience in SEM, Cathode Luminescence, and XRD methods.

2013 *International Lunar Exploration Working Group (ILEWG)*
EuroMoonMars Project, Mars Desert Research Station, Project Lead: Dr. Bernard Foing
Crew 125-B, 23 February – 09 March, Utah
Field Geologist

- Over the 2 weeks of the field trip, we simulated the daily activities of astronauts on the Martian surface, designed workflow and flight plan. I mapped and studied the inverted channels, concretions, gypsum veins and other sedimentary phenomena in the vicinity of MDRS to understand the early discoveries of MSL in Gale Crater, Mars. The outcome of the project: 1 co-authored peer-reviewed publication, 1 IAC Proceeding, 4 abstracts, conference talks, popular science articles, and public outreach talks.

2010 – 2013 *Austrian Space Forum (ÖWF)*
Sep. Feb. PolAres Project, Innsbruck, Austria, Project Lead: Dr. Gernot Grömer
Volunteer

- Austrian Space Forum is a volunteer space organization led by space professionals, focusing on space research (e.g. human-robotic Mars exploration) and outreach/education, an independent organization funded via research projects, donations and outreach activities.
- During Mars mission simulations I participated in Mission Control Center (MCC) activities within the Science Team and Flight Control Team in Innsbruck, Austria. Involvement in development of the mission operation protocols, workflow and flight planning activities.
- Worked on the mission proposal to the next analog campaign in Kaunertal Glacier, Austria (later named as AMADEE-15 mission).
- During MARS 2013 Mission (Morocco) I was between 03–15 February in MCC in Innsbruck, Austria. Helped to design and optimize cartographic map products for the project and future long-duration planetary missions. The project resulted in 4 co-authored peer-reviewed publications, 2 abstracts, 2 posters, popular science articles, and public outreach talks.
- Leading geologist in the Pre-MARS2013 Field Reconnaissance Mission between 28 January–02 February in SE– Morocco to find a "landing site" for the future analog mission (MARS 2013).
- Dachstein Mars Simulation 2012 was held between 27 April – 01 May in Giant Ice Cave, Dachstein, Austria. Supported the analog experiment with ExoMars WISDOM instrument in the ice cave.
- I developed, organized and prepared several educational materials for 3 geoscience workshops and field trips for analog astronauts held in Vienna, Innsbruck and Bletterbach Canyon, Italy (2012). These workshops highly enhanced the success of scientific experiments in the field carried out by analog astronauts during mission simulations. The outcome of these workshops are the presentations, educational materials, 1 abstract, and 1 talk.
- Rio Tinto Mission 2011 was between 17 – 23 April in Rio Tinto Mine Area, Spain. I was the deputy science lead in MCC in Innsbruck, Austria. The project resulted in 1 first-author peer-reviewed publication, one invited talk sponsored by ESA in the International Astronautical Congress in Naples, Italy, and popular science articles.

2008 – 2011 *Eötvös Loránd University of Sciences, Department of Physical and Applied Geology*
Sep. May. **B.Sc. Intern**

- Worked on the characterization of terrestrial river networks on delta plains using satellite images. I analyzed 41 delta and river morphology and collected the factors which play an important role in their morphology. Moreover, I used an extensive literature to collect and compare additional parameters. The outcome was my B.Sc. thesis.
- Studied cryokarstic surface patterns on debris aprons at the mid-latitudes of Mars using optical and topography datasets from Mars Express, Mars Reconnaissance Orbiter and Mars Global Surveyor. Resulted in 1th prize at the Regional University Student Conference, 1th prize at the National University Science Student Conference, and several public outreach talks.
- Served as the student representative from the Student Union in the Center for Earth Sciences (2008–2009).
- Member of the Science Division in the Student Union to discuss possibilities of increasing involvement of students in scientific research at university (2009–2010).

2007 – 2008 *Hungarian Academy of Sciences, Piszkestetö Observatory*
Sep. Jan. **B.Sc. Intern**

- Observations of asteroids. Co-authored report resulted from the project.

EDUCATION

2016 – now **Ph.D. student, Geological Sciences** (Planetary Sciences)
Freie Universität Berlin, Planetary Sciences and Remote Sensing Group
Berlin, Germany

- Expected dissertation title: Bombardment history of the inner Solar System and links to future exploration missions

2015 – 2016 **M.Sc., Geological Sciences** (Planetary Sciences)
Freie Universität Berlin, Planetary Sciences and Remote Sensing Group
Berlin, Germany

- Thesis title: Ice-related geomorphology in Promethei Terra, Mars: Observations and implications for multiple climatic environments.
- Academic focus: Geomorphology, Comparative Planetology, Landscape Evolution Models

2013 **ERASMUS Scholarship** (1 semester)
Freie Universität Berlin, Institute of Geological Sciences

2011 – 2012 **M.Sc., Geology** (3 semesters, unfinished)
Eötvös Loránd University of Sciences, Department of Physical and Applied Geology
Budapest, Hungary

2007 – 2011 **B.Sc., Earth Sciences** (major: geology)
Eötvös Loránd University of Sciences, Department of Physical and Applied Geology
Budapest, Hungary

- Thesis title: Analysis of river networks on delta plains based on satellite images.
- Academic focus: Sedimentology, Remote Sensing

SHORT COURSES, TRAININGS, AND FIELD WORKS

2018 *Origin of the Earth-Moon System, Summer School 2018*
25 – 28 June, German Research Foundation (SFB TRR-170), Trechtingshausen, Germany

2017 *Impact Processes in the Solar System, Summer School 2017*
19 – 22 June, German Research Foundation (SFB TRR-170), Nördlingen, Germany

2016 *Planetary Geodynamics, Winter School 2016*
21 – 23 November, German Research Foundation (SFB TRR-170), Hodenhagen, Germany

2015 *Mid- VIS/NIR Spectroscopy of Mars*
23 – 27 February, Freie Universität Berlin, Germany

2013 *Impact geology field trip to Ries Crater, Germany*
27 – 29 September, Naturkunde Museum, Berlin, Germany

2013 *Introductory and Advanced Impact Geology*
15 – 26 July, Naturkunde Museum, Berlin, Germany

2011 *Radar Remote Sensing Course*
13 – 17 June, ESA/DLR/University of Szeged, Szeged, Hungary

2011 – 2012 Several Radio Magnetotelluric (RMT) and Vertical Electrical Sounding (VES) field trips
Nagybörzsöny – Zebegeny, Tally – Golop – Abaujszanto, Balatonhenye, Hungary
Geogold Karpatia Ltd.

2009 *Hungarian Dinosaur Research Expedition*
27 July – 16 August, Iharkut, Hungary

HONORS, AWARDS, SCHOLARSHIPS

2014 **Student Travel Grant** (Deutsches Zentrum für Luft und Raumfahrt, DLR)
Alpbach Summer School 2014, Austria

2014 **Erasmus Training Program Scholarship** (5 months)
Internship at Deutsches Zentrum für Luft und Raumfahrt (DLR), Berlin, Germany

2013 **Award of the Association of Hungarian Women in Science**
Category: Space Sciences

2013 **Erasmus Scholarship** (1 semester)
Freie Universität Berlin, Germany

2012 **Student Travel Grant** (European Space Agency, ESA)
International Astronautical Congress (IAC), Naples, Italy

2011 **National University Science Student Conference,** 1st runner up
Session: Geomorphology II.
Nyiregyhaza, Hungary

2009 **Regional University Student Conference,** 1st runner up
Session: Geomorphology
Budapest, Hungary

2006 **NASA International Space Camp Scholarship**
22 – 28 July, U.S. Space and Rocket Center, Huntsville, Alabama

2004 – 2007 **Numerous High School Awards** from the Hungarian Astronomical Association and the Hungarian Astronautical Society

PROFESSIONAL MEMBERSHIPS

2016 – now American Geophysical Union

2004 – now Hungarian Astronautical Society, Board Member (2012 – 2015)

2003 – 2008 Hungarian Astronomical Association and Local Group in Kaposvár (co-founder, 2004 – 2007)

PAPERS IN PREPARATION

19. **Orgel, C.**, Hauber, E., Pozzobon, R., Mazzarini, F., Skinner, J. A., van Gasselt, S.: Distribution, origin and evolution of hypothesized mud volcanoes, thumbprint terrain and giant polygons – Implications for sedimentary processes in the northern lowlands of Mars: Case study from the Acidalia Planitia. (*in prep.*)

18. **Orgel, C.**, and Neesemann, A.: Ice-related geomorphology in Promethei Terra, Mars: Complex landscape evolution history of the Hourglass-shaped lobate debris apron and implications for climate models. (*in prep.*)

17. **Orgel, C.**, Ivanov, M. A., Hiesinger, H., van der Bogert, C. H., Pasckert, J. H., Michael, G.: Potential landing sites for the Chang'e-4 exploration mission to the Apollo basin, Moon. (*in prep*.)

16. **Orgel, C.,** Fassett, C. I., Michael, G., van der Bogert, C. H., Hiesinger, H.: Re-examination of the population, stratigraphy, and sequence of Mercurian basins: Implications for Mercury's early impact history and comparison with the Moon. (*in prep*.)

PEER–REVIEWED PAPERS

15. Ivanov, M. A., Hiesinger, H., van der Bogert, C. H., **Orgel, C.**, Paskert, J. H., Head, J. W. 2018: Geologic history of the northern portion of the South Pole-Aitken basin on the Moon. Journal of Geophysical Research Planets 123, https://doi.org/10.1029/2018JE005590

14. Allender, E. J., **Orgel, C.**, Almeida, N. V., Cook, J., Ende, J. J., Kamps, O., Mazrouei, S., Slezak, T. J., Soini, A.-J., Kring, D. A. 2018: Traverses for the ISECG-GER Design Reference Mission for Humans on the Lunar Surface. Advances in Space Research, https://doi.org/10.1016/j.asr.2018.08.032

13. Séjourné, A., Costard, F., Swirad, Z. M., Łosiak, A., Bouley, S., Smith, I., Balme, M. R., **Orgel, C.**, Ramsdale, J. D., Hauber, E., Conway, S. J., van Gasselt, S., Reiss, D., Johnsson, A., Gallagher, C.,

Skinner, J. A., Kereszturi, A., Platz T. 2018: Mapping the northern plains of Mars: using morphotype and distribution of ice-related landforms to understand multiple ice-rich deposits in Utopia Planitia. Journal of Geophysical Research Planets, http://doi:10.1029/2018JE005665

12. **Orgel, C.,** Hauber, E., van Gasselt, S., Reiss, D., Johnsson, A., Ramsdale, J. D., Smith, I., Swirad, Z. M., Wilson, J. T., Séjourné, A., Balme, M. R., Conway, S. J., Costard, F., Eke, V. R., Gallagher, C., Kereszturi, A., Łosiak, A., Massey, R. J., Platz, T., Skinner, J. A., Teodoro, L. F. A. 2018: Gridmapping the Northern Plains of Mars: A New Overview of Recent Water- and Ice-Related Landforms in Acidalia Planitia. Journal of Geophysical Research Planets, http://doi:10.1029/2018JE005664

11. Ramsdale, J. D., Balme, M. R., Gallagher, C., Conway, S. J., Smith, I., Hauber, E., **Orgel, C**., Séjourné, A., Costard, F., Eke, V. R., van Gasselt, S., Johnsson, A., Kereszturi, A., Łosiak, A., Massey, R. J., Platz, T., Reiss, D., Skinner, J. A., Swirad, Z. M., Teodoros, L. F. A., Wilson, J. T. 2018: Gridmapping the northern plains of Mars: Geomorphological, Radar and Water-Equivalent Hydrogen results from Arcadia Plantia suggest possible fluvial and volcanic systems overlain by a ubiquitous and heavily degraded ice-rich latitude-dependent mantle. Journal of Geophysical Research Planets, http://doi:10.1029/2018JE005663

10. De Toffoli, B., Pozzobon, R., Mazzarini, F., **Orgel, C.**, Massironi, M., Giacomini, L., Mangold, N., Cremonese, G. 2018: Estimate of depths of source fluids related to mound fields on Mars. Planetary and Space Science, https://doi.org/10.1016/j.pss.2018.07.005

09. Riedel, C., Michael, G., Kneissl, T., **Orgel, C.**, Hiesinger, H., van der Bogert, C. H. 2018: A New Tool to Account for Crater Obliteration Effects in Crater Size-Frequency Distribution Measurements. Earth and Space Science, 5, 258-267, https://doi.org/10.1002/2018EA000383

08. **Orgel, C.**, Michael, G., Fassett, C. I., van der Bogert, C. H., Riedel, C., Kneissl, T., Hiesinger, H. 2018: Ancient bombardment of the inner Solar System – Reinvestigation of the "fingerprints" of different impactor populations on the lunar surface. – Journal of Geophysical Research, Vol. 123, Issue 3, 748–762, http://doi.org/10.1002/2017JE005451

07. Ramsdale, J. D., Balme, M. R., Conway, S. J., Gallagher, C., van Gasselt, S., Hauber, E., **Orgel, C**., Sejourne, A., Skinner, J. A., Jr., Costard, F., Johnsson, A., Losiak, A., Reiss, D., Swirad, Z., Kereszturi, A., Smith, I., Platz, T. 2017: Grid-based mapping: a method for rapidly determining the spatial distributions of small features over very large areas. – Planetary and Space Science 140, 49-61.

06. Cross, M., Battler, M., Maiwald, V., van't Woud, H., Ono, A., Schlacht, I., L., **Orgel, C.**, Foing, B., McIsaac, K. 2016: Operational Lessons Learnt from the 2013 ILEWG EuroMoonMars-B Analogue Campaign for Future Habitat Operations on Moon and Mars. – Acta Futura 10, 61 – 73.

05. Losiak, A., Gołębiowska, I., **Orgel, C.**, Moser, L., MacArthur, J., Boyd, A., Hettrich, S., Wittek, S., Jones, N., Groemer, G. 2014: Remote Science Support during MARS2013: testing a map-based system of data processing and utilization for the future long-duration planetary missions. – Astrobiology Journal Vol.14 (5): 417 – 430, http://doi:10.1089/ast.2013.1071

04. Groemer, G. E., Soucek, A., Frischauf, N., Stumptner, W., Ragonig, C., Sams, S., Bartenstein, T., Haeuplik-Meusburger, S., Petrova, P., Evetts, S., Sivenesan C. and the **MARS2013 Team** 2014: The MARS2013 Mars Analog Mission. – Astrobiology Journal Vol.14 (5): 360 – 376.

03. Groemer, G. E., Foresta, L., Turetschek, T. and the **MARS2013 Team** 2014: A case for using ground-based thermal inertia measurements to detect Martian caves. – Astrobiology Journal Vol.14 (5): 431 – 437.

02. Groemer, G. E., Sattler, B., Weisleitner, K., Hunger, L., Kohstall, C., Frisch, A., Jozefowicz, M., Meszynski, S., Storrie-Lombardi, M. and the **MARS2013 Team** 2014: Field trial of a Dual-Wavelength Fluorescent Emission (L.I.F.E) instrument and the Magma White rover during the MARS2013 Mars Analog Mission. – Astrobiology Journal Vol.14 (5): 391 – 405.

01. **Orgel, C.**, Kereszturi, A., Váczi, T., Groemer, G., Sattler, B. 2014: Scientific Results and Lessons Learned from an Integrated Crewed Mars Exploration Simulation at the Rio Tinto Mars Analogue Site. Acta Astronautica 94/2 (2014), 736-748. http://doi:10.1016/j.actaastro.2013.09.014

ABSTRACTS

47. **Orgel, C.,** Fassett, C. I., Michael, G., van der Bogert, C. H., Hiesinger, H. 2018: Re-examination of the population, stratigraphy, and sequence of Mercurian basins: Implications for Mercury's early impact history and comparison with the Moon. EPSC Abstracts Vol. 12, European Planetary Science Congress, 17 – 21 September, Berlin, Germany, Abstract #EPSC-2018-533 (poster).

46. **Orgel, C.**, Ivanov, M. A., Hiesinger, H., van der Bogert, C. H., Pasckert, J. H., Michael, G. 2018: Potential landing sites within South Pole-Aitken basin, Moon: (a) Chang'e-4 exploration mission to the Apollo basin, (b) Traverses for the ISECG-GER Design Reference Mission for Humans on the Lunar Surface. CNSA-ESA Lunar Community Workshop, Amsterdam, NL (talk).

45. **Orgel, C.**, Ivanov, M. A., Hiesinger, H., Pasckert, J. H., van der Bogert, C. H., Michael, G. 2018: Poteltial landing sites for the Chang'e-4 exploration mission to the Apollo basin, Moon. European Lunar Symposium, 14–16 May, Toulouse, France (poster).

44. **Orgel, C.**, Michael, G., Fassett, C. I., van der Bogert, C. H., Riedel, C., Kneissl, T., Hiesinger, H. 2018: The lunar basin sequence based on absolute model ages derived via Buffered Non-Sparseness Correction: Implications for impactor population(s). 49th Lunar and Planetary Science Conference, 19–23 March, Houston, TX, USA, Abstract #1395 (poster).

43. Riedel, C., Michael, G., **Orgel, C**., Kneissl, T. 2018: An ArcGIS independent application to conduct crater size-frequency measurements with respect to crater obliteration effects. 49th Lunar and Planetary Science Conference, 19– 23 March, Houston, TX, USA, Abstract #1478.

42. **Orgel, C.**, Ivanov, M. A., Hiesinger, H., Pasckert, J. H., van der Bogert, C. H., Michael, G. 2018: Characterization of high priority landing sites for the Chang'e-4 exploration mission to the Apollo Basin, Moon. 49th Lunar and Planetary Science Conference, 19– 23 March, Houston, TX, USA, Abstract #1969.

41. Ivanov, M.A., Hiesinger, H., **Orgel, C.**, Pasckert, J. H., van der Bogert, C. H., Head, J. W. 2018: Geology of the northern portion of the SPA Basin on the Moon: Evidence for compositional stratification of the ancient lunar crust. 49th Lunar and Planetary Science Conference, 19– 23 March, Houston, TX, USA, Abstract #1138.

40. Gross, C. **Orgel, C.**, Poulet, F., Carter, J., Horgan, B. and Bishop, J. L. 2018: ExoMars 2020: High priority science targets within the Mawrth Vallis candidate landing site. 49th Lunar and Planetary Science Conference, 19– 23 March, Houston, TX, USA, Abstract #1405 (poster)

39. **Orgel, C.**, Michael, G., Fassett, C. I., van der Bogert, C. H., Riedel, C., Kneissl, T., Hiesinger, H. 2017: Ancient bombardment of the inner Solar System – Reinvestigation of the "fingerprints" of different impactor populations on the lunar surface. Paneth Kolloquium, Nördlingen, Germany (talk)

38. **Orgel, C.**, Michael, G., Kneissl, T. 2017: Ancient bombardment of the inner Solar System – Reinvestigation of the key lunar basins with a new crater counting approach, the buffered non-sparseness correction. 5th European Lunar Symposium, Münster, Germany (talk)

37. **Orgel, C.**, Allender, E. J., Almeida, N. V., Cook, J., Ende, J. J., Kamps, O., Mazrouei, S., Slezak, T. J., Soini, A. J., Kring, D. A. 2017: Landing site assessment for phase 2 of eDSH-enabled lunar missions being examined as an ISECG-GER mission scenario. 5th European Lunar Symposium, Münster, Germany (poster)

36. Mazrouei, S., Allender, E. J., Almeida, N. V., Cook, J., Ende, J. J., Kamps, O., **Orgel, C.**, Slezak, T. J., Soini, A. J., Kring, D. A. 2017: Exploration of South Polar region of the Moon: Tele-operated traverses. 5th European Lunar Symposium, Münster, Germany (poster)

35. **Orgel, C.**, Michael, G., Kneissl, T. 2017: Ancient bombardment of the inner Solar System – Reinvestigation of the "fingerprints" of different impactor populations on the lunar surface. 48th Lunar and Planetary Science Conference, 20– 25 March, Houston, TX, USA, Abstract #1033 (talk)

34. Ende, J. J., Allender, E. J., Almeida, N. V., Cook, J., Kamps, O., Mazrouei, S., **Orgel, C**., Slezak, T. J., Soini, A. J., Kring, D. A. 2017: Landing site assessment for phase 2 of eDSH-enabled lunar missions being examined as an ISECG-GER mission scenario. 48th Lunar and Planetary Science Conference, 20– 25 March, Houston, TX, USA, Abstract #1880 (poster)

33. Kamps, O., Allender, E. J., Almeida, N. V., Cook, J., Ende, J. J., Mazrouei, S., **Orgel, C**., Slezak, T. J., Soini, A. J., Kring, D. A. 2017: Exploration of South Polar region of the Moon: Tele-operated traverses. 48th Lunar and Planetary Science Conference, 20– 25 March, Houston, TX, USA, Abstract #1909 (poster)

32. **Orgel, C.**, Michael, G., Kneissl, T. 2016: Ancient bombardment of the inner Solar System – Reinvestigation of the "fingerprints" of different impactor populations on the lunar surface. 2nd TRR-170 Project Annual Retreat Meeting (German Research Foundation), 24 – 25 November, Hodenhagen, Germany (talk)

31. **Orgel, C.**, Hauber, E., van Gasselt, S., Pozzobon, R., Skinner, J., Jr. 2016: Distribution, origin and evolution of hypothesized mud volcanoes, thumbprint terrain, small mounds and giant polygons: Implications for sedimentary processes in the northern lowlands of Mars: Case study from the Acidalia Planitia. Geophysical Research Abstracts Vol. 18, European Geosciences Union (EGU), EGU General Assembly, 17 – 22 April, Vienna, Austria, #EGU2016-1038-2 (poster)

30. van Gasselt, S., Rossi, A. P., **Orgel, C.**, Schulz, J. 2015: Estimates of denudation rates and implications for climate control, Phlegra Montes (Mars). Geophysical Research Abstracts Vol. 17, European Geosciences Union (EGU), EGU General Assembly, 12 – 17 April, Vienna, Austria, #EGU2015-4249

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BOOK CHAPTER

01. Kereszturi, A., and **Orgel, C**. 2018: Proposed Elements and an Approach to Evaluate the Astrobiology Potential of Landing Sites on Mars, Ed. in Research Advances in Astronomy, Nova Science Publisher, Hauppauge, NY, ISBN: 978-1-53614-097-2.

PUBLIC OUTREACH AND EDUCATION ACTIVITIES

- Popular science articles in "Termeszet Vilaga", Tetekas Nyuz (University Press), THE Magazin, THE Portal, Interpress Magazin, Index Portal (in Hungarian)

- Public outreach talks at numerous public platforms, such as Word Space Week, European Space Expo, Budapest Science Meetup, Eötvös Lorand University, Hungarian Astronomical Association, Hungarian Astronautical Society, THE Roadshow, Lange Nacht der Wissenschaften (in Hungarian, German and English)