Planetary Mapping

Results

Project Information

PLANMAP

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Project website

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10.3030/776276

Project closed

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25 October 2017

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€ 1 499 620,00

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€ 1 499 620,00

Coordinated by
UNIVERSITA DEGLI STUDI DI PADOVA
Italy

This project is featured in...

CORDIS provides links to public deliverables and publications of HORIZON projects.

Links to deliverables and publications from FP7 projects, as well as links to some specific result types such as dataset and software, are dynamically retrieved from OpenAIRE.

Deliverables

Documents, reports (31)

Project management guidelines
This document will outline the procedures to be followed by all beneficiaries to ensure the timely delivery and quality of the PLANMAP results. It will also deal with financial reporting based on GA provisions.

Production of flyers-Version3
6 flyers with illustration or comics on the front and description of the final results and future perspective to the rear.

Upgrade of the MSD document and geo-stratigraphic maps ready for spectral/compositional integration
Incorporation to the MSD document of stratigraphic and chronostratigraphic standards for PLANMAP geo-stratigraphic maps and release of geo-stratigraphic maps ready for spectral/compositional integration.

First report on communications
Document in which are reported all the outreach activities of the first 6 months

Release of geomorphological maps
Production of geomorphological maps in GIS environment (Hokusai quadrangle on Mercury; Gale crater, Nili Fossae, Western Arabia Terra and Argyre basin on

Mars; the Beethoven basin on Mercury; the South Pole Aitken basin on the Moon)

Release of the products for future landing sites

Extend the work IN D5.1, D5.2 AND D5.3 to regions of interest for the evaluation of the next landing sites. The deliverables will be realized with the aid and guide of the subcontractor for the technical aspects of merging 3D products into virtual environment and for the interaction in virtual reality. In this case the virtual environment will have twofold aims: training and geological exploration in view of future landing missions. Both these aims will be defined by LPG/CNRS in agreement with the consortium partners.

Stratigraphic chart and absolute model ages of the interior South Pole-Aitken basin, Moon

Stratigraphic chart and absolute model ages of the interior of the South Pole-Aitken basin to geologically map its floor at a scale of 1:2,000,000 and to decipher the origin and evolution of the units exposed within this basin.

External Advisory Board (EAB) minutes II

Miinutes of advisory board members giving advises on standards, main deliverables, dissemination and communication.

3D geomodels in virtual reality

Apply the results obtained in D5.1 and D5.2 into virtual environments, both 3D CAVE and virtual reality systems with headsets. The deliverable will be realized in close collaboration with the subcontractor which will have the duty of merging the D5.1 and D5.2 products into virtual reality suite of tools with the scientific supervision of LPG/CNRS.

3D products (geomodels) of the merged GIS and maps of Gale crater

High resolution mapping in 3D of the merged GIS and maps of Gale crater. The subcontractor of LPG/CNRS will have the specific duty of providing tools for 3D geomodels in D5.2.

Report on communications-1st update

Document in which are reported all the outreach activities of the first year months

Production of flyers-Version2

6 flyers with illustration or comics on the front and description of the development of PLANMAP project and products to the rear.

Spectral index and RGB maps-Version 1

First draft of spectral indexes and RGB maps in support of the geological maps on Mercury, Mars and the Moon.

Summer school

Document reporting the summer school activities focused on advanced geological mapping including the results of the evaluation form of the students.

Upgrade of the MSD document and integrated geological maps ready for data fusion
Incorporation of spectral and compositional information standards to the MSD document for PLANMAP integrated geologic maps and release of PLANMAP integrated geological maps ready for data fusion

Production of flyers-Version1
6 flyers with illustration or comics on the front and the description of the goals and activities to the rear.

Spectral index and RGB maps-Version 3
Spectral index and RGB maps in support of the geological-compositional maps on the Moon, Mars and Mercury

3D geo-models based on multiple advanced datasets of Mercury (explicit modelling)
3D geological models from geological maps of Mercury (generated by D2.2 and D3.3) and DEMs

Upgrade of the stratigraphic chart after the integration with compositional units
Integration of the stratigraphic charts with compositional units to realize the final geological maps integrating stratigraphic informations with spectral ones.

3D geo-models based on multiple dataset of the Moon (implicit or explicit modelling)
3D model based on DTMs and geological maps of the Moon produced in D2.2 and D3.1.

Final report on communications
Document in which are reported all the outreach activities of the three year project.

Stratigraphic chart and absolute model ages of the Argyre basin and Western Arabia Terra , Mars
Stratigraphic chart and absolute model ages of the Argyre basin and Western Arabia Terra to geologically map them at scale 1:2,000,000 to 1:500.000 respectively and to decipher the origin and evolution of the units exposed in these areas.

Merged products (in GIS and as maps) of orbital and in situ data of Gale crater
Merging of orbital data with in situ data to provide a higher resolution mapping in 3D on Gale crater, the site where Curiosity rover landed.

Mapping standard definition (MSD) document
Definition of standards for PLANMAPmaps of the Moon, Mars, and Mercury

Stratigraphic chart and absolute model ages of the floor of the Beethoven basin on Mercury

Stratigraphic chart and absolute model ages of the floor of the Beethoven basin on Mercury to geologically map the floor of the basin at a scale of 1:500,000 and to decipher the origin and evolution of the units exposed in this basin.

Report on communications-2nd update

Document in which are reported all the outreach activities of the second year.

3D geo-models based on multiple dataset of Mars (implicit or explicit modelling)

3D geological models from geological maps of Mars, DEMs, and, when available, radar sounder data.

Retrieved compositional units

Definition of the spectral units related to different lithologies for each geological map on the Moon, Mars and Mercury

Production of PLANMAP graphic novel

The six illustrations of the flyers of each year are integrated together to complete PLANMAP graphic novel in the form of a child-dedicated illustrated story and a teenager-dedicated comic.

Spectral index and RGB maps-Version 2

Spectral index and RGB maps in support of geological-compositional maps on the Moon, Mars and Mercury.

External Advisory Board (EAB) minutes I

Minutes of advisory board members giving advises on standards, main deliverables, dissemination and communication.

Websites, patent fillings, videos etc. (5)

Web-interactive project- advanced version

Advanced version of a web-page enabling virtual trips across the analysed planetary surfaces.

Launch of public website and social media

PLANMAP web-page will include tools and products whenever they are accomplished Launch of the PALNMAP social media (Research Gate, Academia, Facebook,Twitter) to draw attention to PLANMAP outcomes and events

Web-interactive project - final version

Final version of a web-page enabling virtual trips across the analysed planetary surfaces and possibly subsurface.

Data fusion portal

Demonstrator web service with data sharing, serving and cross-analysis capabilities.

Web-interactive project-early version

First version of a web-page enabling virtual trips across the analysed planetary surfaces.

Open Research Data Pilot (5)

Data Management Plan – initial version

First version of the Planmap data management plan, describing data organisation, documentation, access, sharing, use and preservation aspects

Data Management Plan – 1st update

First iteration of the PLANMAP data management plan, describing data organisation, documentation, access, sharing, use and preservation aspects

Data Management Plan –2nd update

Second iteration of the Planmap data management plan, describing data organisation, documentation, access, sharing, use and preservation aspects

Public data/code delivery-Version 1

Collection and delivery of code and data produced until month 15 via public code repositories as well as planmap portal and web services

Public data/code delivery –Version 2

Collection and delivery of code and data produced until month 25 via public code repositories as well as planmap portal and web services

Demonstrators, pilots, prototypes (2)

CAVE representation

Cave Automatic Virtual Environment (CAVE) exhibition of PLANMAP goals and products.

Logo definition

Logo of PALNMAP project

Publications

Peer reviewed articles (22)

Tectono-Magmatic, Sedimentary, and Hydrothermal History of Arsinoes and Pyrrhae Chaos, Mars
Author(s): Erica Luzzi, Angelo Pio Rossi, Cristian Carli, Francesca Altieri
Published in: Journal of Geophysical Research: Planets, Issue 125/12, 2020, Page(s) n/a, ISSN 2169-9097
Publisher: Wiley
DOI: 10.1029/2019je006341

Structural analysis of sulfate vein networks in Gale crater (Mars)
Author(s): Barbara De Toffoli, Nicolas Mangold, Matteo Massironi, Alain Zanella, Riccardo Pozzobon, Stephane Le Mouélic, Jonas L'Haridon, Gabriele Cremonese
Published in: Journal of Structural Geology, Issue 137, 2020, Page(s) 104083, ISSN 0191-8141
Publisher: Pergamon Press Ltd.
DOI: 10.1016/j.jsg.2020.104083

A fault surface exposed on Mercury
Author(s): D.L. Pegg, D.A. Rothery, S.J. Conway, M.R. Balme
Published in: Planetary and Space Science, Issue 201, 2021, Page(s) 105223, ISSN 0032-0633
Publisher: Elsevier BV
DOI: 10.1016/j.pss.2021.105223

Geological mapping and chronology of lunar landing sites: Apollo 12
Author(s): W. Iqbal, H. Hiesinger, C.H. van der Bogert
Published in: Icarus, Issue 352, 2020, Page(s) 113991, ISSN 0019-1035
Publisher: Academic Press
DOI: 10.1016/j.icarus.2020.113991

Asymmetric magnetic anomalies over young impact craters on Mercury
Author(s): V. Galluzzi, J. S. Oliveira, J. Wright, D. A. Rothery, L. L. Hood
Published in: Geophysical Research Letters, 2021, ISSN 0094-8276
Publisher: American Geophysical Union
DOI: 10.1029/2020gl091767

Multiple subglacial water bodies below the south pole of Mars unveiled by new MARSIS data

Author(s): Sebastian Emanuel Lauro, Elena Pettinelli, Graziella Caprarelli, Luca Guallini, Angelo Pio Rossi, Elisabetta Mattei, Barbara Cosciotti, Andrea Cicchetti, Francesco Soldovieri, Marco Cartacci, Federico Di Paolo, Raffaella Noschese, Roberto Orosei
Published in: Nature Astronomy, Issue 5/1, 2021, Page(s) 63-70, ISSN 2397-3366
Publisher: Nature Publishing Group
DOI: 10.1038/s41550-020-1200-6

China's Chang'e-5 landing site: Geology, stratigraphy, and provenance of materials

Author(s): Yuqi Qian, Long Xiao, Qian Wang, James W. Head, Ruihong Yang, Yan Kang, Carolyn H. van der Bogert, Harald Hiesinger, Xiaoming Lai, Guoxing Wang, Yong Pang, Nai Zhang, Yuefeng Yuan, Qi He, Jun Huang, Jiannan Zhao, Jiang Wang, Siyuan Zhao
Published in: Earth and Planetary Science Letters, Issue 561, 2021, Page(s) 116855, ISSN 0012-821X
Publisher: Elsevier BV
DOI: 10.1016/j.epsl.2021.116855

Global-scale brittle plastic rheology at the cometesimals merging of comet 67P/Churyumov–Gerasimenko

Author(s): Marco Franceschi, Luca Penasa, Matteo Massironi, Giampiero Naletto, Sabrina Ferrari, Michele Fondriest, Dennis Bodewits, Carsten Güttler, Alice Lucchetti, Stefano Mottola, Maurizio Pajola, Imre Toth, Jacob Deller, Holger Sierks, Cecilia Tubiana
Published in: Proceedings of the National Academy of Sciences, Issue 117/19, 2020, Page(s) 10181-10187, ISSN 0027-8424
Publisher: National Academy of Sciences
DOI: 10.1073/pnas.1914552117

Explosive vent sites on Mercury: Commonplace multiple eruptions and their implications

Author(s): D.L. Pegg, D.A. Rothery, M.R. Balme, S.J. Conway
Published in: Icarus, Issue 365, 2021, Page(s) 114510, ISSN 0019-1035
Publisher: Academic Press
DOI: 10.1016/j.icarus.2021.114510

Modification of Caloris ejecta blocks by long-lived mass-wasting: A volatile-driven process?

Author(s): Jack Wright, Susan J. Conway, Costanza Morino, David A. Rothery, Matthew R. Balme, Caleb I. Fassett
Published in: Earth and Planetary Science Letters, Issue 549, 2020, Page(s) 116519, ISSN 0012-821X
Publisher: Elsevier BV
DOI: 10.1016/j.epsl.2020.116519

On the asymmetry of Nathair Facula, Mercury

Author(s): David A. Rothery, Océane Barraud, Sebastien Besse, Cristian Carli, David L. Pegg, Jack Wright, Francesca Zambon
Published in: Icarus, Issue 355, 2021, Page(s) 114180, ISSN 0019-1035
Publisher: Academic Press
DOI: 10.1016/j.icarus.2020.114180

Planet Mercury: Volcanism in a theatre of global contraction, with examples from the Hokusai quadrangle

Author(s): Jack Wright, Paul K. Byrne, David A. Rothery
Published in: Journal of Volcanology and Geothermal Research, Issue 417, 2021, Page(s) 107300, ISSN 0377-0273
Publisher: Elsevier BV
DOI: 10.1016/j.jvolgeores.2021.107300

Rationale for BepiColombo Studies of Mercury's Surface and Composition

Author(s): David A. Rothery, Matteo Massironi, Giulia Alemanno, Océane Barraud, Sebastien Besse, Nicolas Bott, Rosario Brunetto, Emma Bunce, Paul Byrne, Fabrizio Capaccioni, Maria Teresa Capria, Cristian Carli, Bernard Charlier, Thomas Cornet, Gabriele Cremonese, Mario D'Amore, M. Cristina De Sanctis, Alain Doressoundiram, Luigi Ferranti, Gianrico Filacchione, Valentina Galluzzi, Lorenza Giacomini, Manuel
Published in: Space Science Reviews, Issue 216/4, 2020, Page(s) n/a, ISSN 0038-6308
Publisher: Kluwer Academic Publishers
DOI: 10.1007/s11214-020-00694-7

An Integrated Geologic Map of the Rembrandt Basin, on Mercury, as a Starting Point for Stratigraphic Analysis

Author(s): Andrea Semenzato, Matteo Massironi, Sabrina Ferrari, Valentina Galluzzi, David A. Rothery, David L. Pegg, Riccardo Pozzobon, Simone Marchi
Published in: Remote Sensing, Issue 12/19, 2020, Page(s) 3213, ISSN 2072-4292
Publisher: Multidisciplinary Digital Publishing Institute (MDPI)
DOI: 10.3390/rs12193213

Geologic History of the Northern Portion of the South Pole-Aitken Basin on the Moon

Author(s): M. A. Ivanov, H. Hiesinger, C. H. van der Bogert, C. Orgel, J. H. Pasckert, J. W. Head
Published in: Journal of Geophysical Research: Planets, Issue 123/10, 2018, Page(s) 2585-2612, ISSN 2169-9097
Publisher: John Wiley & Sons
DOI: 10.1029/2018JE005590

Abundance and size-frequency distribution of boulders in Linné crater's ejecta (Moon)
Author(s): Maurizio Pajola, Riccardo Pozzobon, Alice Lucchetti, Sandro Rossato, Emanuele Baratti, Valentina Galluzzi, Gabriele Cremonese
Published in: Planetary and Space Science, 2018, ISSN 0032-0633
Publisher: Elsevier BV
DOI: 10.1016/j.pss.2018.11.008

Surface Expressions of Subsurface Sediment Mobilization Rooted into a Gas Hydrate-Rich Cryosphere on Mars
Author(s): Barbara De Toffoli, Riccardo Pozzobon, Matteo Massironi, Francesco Mazzarini, Susan Conway, Gabriele Cremonese
Published in: Scientific Reports, Issue 9/1, 2019, ISSN 2045-2322
Publisher: Nature Publishing Group
DOI: 10.1038/s41598-019-45057-7

Geological mapping and chronology of lunar landing sites: Apollo 11
Author(s): W. Iqbal, H. Hiesinger, C.H. van der Bogert
Published in: Icarus, Issue 333, 2019, Page(s) 528-547, ISSN 0019-1035
Publisher: Academic Press
DOI: 10.1016/j.icarus.2019.06.020

Geology of the Hokusai quadrangle (H05), Mercury
Author(s): Jack Wright, David A. Rothery, Matthew R. Balme, Susan J. Conway
Published in: Journal of Maps, Issue 15/2, 2019, Page(s) 509-520, ISSN 1744-5647
Publisher: Taylor and Francis
DOI: 10.1080/17445647.2019.1625821

Lermontov crater on Mercury: Geology, morphology and spectral properties of the coexisting hollows and pyroclastic deposits
Author(s): M. Pajola, A. Lucchetti, A. Semenzato, G. Poggiali, G. Munaretto, V. Galluzzi, G.A. Marzo, G. Cremonese, J.R. Brucato, P. Palumbo, M. Massironi
Published in: Planetary and Space Science, Issue 195, 2021, Page(s) 105136, ISSN 0032-0633
Publisher: Elsevier BV
DOI: 10.1016/j.pss.2020.105136

3D digital outcrop model reconstruction of the Kimberley outcrop (Gale crater, Mars) and its integration into Virtual Reality for simulated geological analysis
Author(s): Gwénaël Caravaca, Stéphane Le Mouélic, Nicolas Mangold, Jonas L'Haridon, Laetitia Le Deit, Marion Massé
Published in: Planetary and Space Science, Issue 182, 2020, Page(s) 104808, ISSN 0032-0633

Publisher: Elsevier BV
DOI: 10.1016/j.pss.2019.104808

Investigating Lunar Boulders at the Apollo 17 Landing Site Using Photogrammetry and Virtual Reality

Author(s): Stéphane Le Mouélic, Pauline Enguehard, Harrison H. Schmitt, Gwénaël Caravaca, Benoît Seignovert, Nicolas Mangold, Jean-Philippe Combe, François Civet
Published in: Remote Sensing, Issue 12/11, 2020, Page(s) 1900, ISSN 2072-4292
Publisher: Multidisciplinary Digital Publishing Institute (MDPI)
DOI: 10.3390/rs12111900

Conference proceedings (118)

Exploring the lunar far side at Tsiolkovskiy crater
Author(s): Tognon G., Pozzobon R., Massironi M.
Published in: ELS, Issue n/a, 2020, Page(s) 137-138
Publisher: NASA SSERVI

The lunar south pole: A geological map of the South Pole-Aitken basin region
Author(s): Poehler C.M., van der Bogert C.H., Hiesinger H., Ivanov M. and Head J.W.
Published in: LPSC, Issue n/a, 2021, Page(s) 1915
Publisher: Lunar and Planetary Institute

Using 3D reconstruction of centimeter-scale sedimentary structures to document changes in the depositional settings of Glen Torridon region (Gale crater, Mars)
Author(s): Caravaca G., Mangold N., Le Deit L., Le Mouélic S., Dehouck E., Gasnault O., Edgett K.S., Rivera-Hernandez F., Fedo C.M., Wiens R.C.
Published in: EPSC, Issue 14, 2020, Page(s) EPSC2020-49
Publisher: EPSC-Copernicus

Detailed age determinations for Tsiolkovskiy crater
Author(s): Tognon G., Ferrari S., Pozzobon R., Massironi M.
Published in: EGU, Issue n/a, 2021, Page(s) n/a
Publisher: EGU-Copernicus
DOI: 10.5194/egusphere-egu21-10084

Geological mapping of Mawrth Vallis, Mars, by PLANMAP
Author(s): Wright J., Balme M., Davis J., Fawdon P. and Rothery D.A.
Published in: EPSC, Issue n/a, 2020, Page(s) EPSC2020-807

Publisher: EPSC-Copernicus
DOI: 10.5194/epsc2020-807

Preliminary Geologic Map of the Beethoven Basin, Mercury
Author(s): Lewang A. W., H. Hiesinger, H. Bernhardt, V.Galluzzi, L.Guzzetta, and M.Massironi
Published in: Lunar and Planetary Science Conference, 2018, Page(s) "#1846"
Publisher: Lunar and Planetary Science Conference

Kuiper quadrangle (H06) geological map: integration between morphological and spectral characteristics
Author(s): Giacomini L., Carli C., Zambon F., Galluzzi V., Ferrari S., Massironi M., Altieri F., Ferranti L., Palumbo P., Capaccioni F.
Published in: LPSC, Issue n/a, 2021, Page(s) 1934
Publisher: Lunar and Planetary Institute

3D geological model of Rembrandt basin on Mercury and calculation basin infilling volumes
Author(s): Pozzobon R., Massironi M., Penasa L., Ferrari S.
Published in: EPSC 2021, 2021
Publisher: Europlanet Science Congress 2021
DOI: 10.5194/epsc2021-749

Late lava flows and hydrothermal alteration in Ladon basin (Mars)
Author(s): Massironi M., De Toffoli B., Pozzobon R., Mege D., Marinangeli L., Gurgurewicz J., Pompilio L., Rossi A.P., Sauro F., Pajola M., Lucchetti A., Tornabene L., Cremonese G., Thomas N.
Published in: EGU General Assembly, Issue n/a, 2020, Page(s) 1913 5
Publisher: EGU General Assembl y

Geologic Map, Landing site selection and traverse planning on Copernicus crater (Moon)
Author(s): Pozzobon R., Tusberti F., Pajola M., Massironi M.
Published in: ELS, Issue n/a, 2020, Page(s) n/a
Publisher: NASA SSERVI

HYDROTHERMAL DEPOSITS ASSOCIATED WITH VOLCANO TECTONIC STRUCTURES, SOUTH OF AUREUM CHAOS (MARS)
Author(s): Erica Luzzi; Angelo Pio Rossi; Cristian Carli; Francesca Altieri
Published in: XVI Congresso Nazionale di Scienze Planetarie, Issue n/a, 2020, Page(s) n/a
Publisher: XVI Congres so Nazional e di Scienze Planetari e
DOI: 10.5281/zenodo.5119607

Fluid migration through fracture networks, Gale crater (Mars)

Author(s): De Toffoli B., Mangold N., Massironi M., Pozzobon R., Le Mouélic S., L'Haridon J., Crmonese G.
Published in: EGU General Assembly, Issue n/a, 2020, Page(s) 1684 9
Publisher: EGU General Assembl y

3D geomodel of the deformed deposits in Crommelin Crater (Mars)
Author(s): Pozzobon R., Pesce D., Massironi M.
Published in: EPSC, Issue n/a, 2020, Page(s) EPSC2020-770
Publisher: EPSC-Copernicus
DOI: 10.5194/epsc2020-770

Geological context for the lunar south pole: A map of the South Pole-Aitken basin region
Author(s): Poehler C. M., Ivanov M. A., van der Bogert C. H., Hiesinger H., Iqbal W., Pasckert J. H., Wright J., and Head J. W.
Published in: Lunar and Planetary Science Conference, Issue 51, 2020, Page(s) 1951
Publisher: Lunar and Planetar y Institute

New geological map and absolute model ages for the Apollo 15 landing site
Author(s): Iqbal W., Hiesinger H., and van der Bogert C. H.
Published in: Lunar and Planetary Science Conference, Issue 51, 2020, Page(s) 1073
Publisher: Lunar and Planetar y Institute

Constructing and deconstructing geological maps: a QGIS plugin for creating topologically consistent geological cartography
Author(s): Penasa L., Frigeri A., Pozzobon R., Brandt C.H., De Toffoli B., Naß A., Rossi A.P. and Massironi M.
Published in: EPSC, Issue n/a, 2020, Page(s) EPSC2020-1057
Publisher: EPSC-Copernicus
DOI: 10.5194/epsc2020-1057

Chaotic Caldera collapse: a new interpretation for the origin of Chaotic terrains on Mars
Author(s): Erica Luzzi, Angelo Pio Rossi, Matteo Massironi, Riccardo Pozzobon, Daniele Maestrelli, and Giacomo Corti
Published in: EGU General Assembly, Issue n/a, 2020, Page(s) n/a
Publisher: EGU General Assembl y 2020
DOI: 10.5194/egusphere-egu2020-11071

Geological Mapping of the Neruda Quadrangle (H13), Mercury
Author(s): B.Man, D.A.Rothry, M.R.Balme, J.Wright, S.J.Conway
Published in: 2nd British Planetary Sciences Conference13 – 15 January, 202, Issue n/a, 2019, Page(s) 80

Publisher: n/a
DOI: 10.5281/zenodo.5093623

Geological Mapping of the Debussy Quadrangle (H-14) Preliminary Results
Author(s): D.Pegg, D.A.Rothery, M R Balme, S.J.Conway
Published in: 2nd British Planetary Sciences Conference13 – 15 January, 2020, Issue n/a, 2019, Page(s) 96
Publisher: n/a
DOI: 10.5281/zenodo.5093627

The lunar chronology: A status report
Author(s): Hiesinger H., van der Bogert C. H., Iqbal W., and Gebbing T.
Published in: Lunar and Planetary Science Conference, Issue 51, 2020, Page(s) 2045
Publisher: Lunar and Planetar y Institute

Integrating morphostratigraphic and spectral units on Apollo basin on the Moon
Author(s): F. Zambon, C. Carli, C. H. van der Bogert, C. Pohler, H. Hiesinger, F. Altieri, M. Massironi
Published in: XVI Congresso Nazionale di Scienze Planetarie, Issue n/a, 2020, Page(s) n/a
Publisher: XVI Congresso Nazionale di Scienze Planetarie
DOI: 10.5281/zenodo.5140493

Absolute model ages for geological units in Schrödinger basin: Context for the 2024 PRISM CLPS mission
Author(s): van der Bogert C.H., Poehler C.M., Kring D.A. and Hiesinger H.
Published in: LPSC, Issue n/a, 2021, Page(s) 2351
Publisher: Lunar and Planetary Institute

The study of the relationship between pit chains and grabens and their role in the formation of Rift systems and Troughs in Noctis Labyrinthus
Author(s): El Yazidi M., Pozzobon R., Penasa L., Debei S., Massironi M.
Published in: EPSC, Issue n/a, 2020, Page(s) EPSC2020-1069
Publisher: EPSC-Copernicus
DOI: 10.5194/epsc2020-1069

A new map of the South Pole-Aitken basin including the South Pole
Author(s): Poehler C.M., Ivanov M.A., van der Bogert C.H., Hiesinger H., Pasckert J.H., Iqbal W., Wright J. and Head J.W.
Published in: ELS, Issue n/a, 2020, Page(s) 108-109
Publisher: NASA SSERVI

Using Virtual and Augmented Reality for Planetary surfaces investigations - a case study on Mars and the Moon

Author(s): Le Mouélic S., Caravaca G., Mangold N., Wright J., Carli C., Altieri F., Zambon F., Van der Bogert C.H., Pozzobon R., Massironi M., De Toffoli B., Rossi A.P.
Published in: LPSC, Issue 52, 2021, Page(s) 1514
Publisher: Lunar and Planetary Institute

A new geological map of the lunar South Pole-Aitken basin region

Author(s): Poehler C.M., Ivanov M.A., van der Bogert C.H., Hiesinger H., Iqbal W., Pasckert J.H., Wright J. and Head J.W.
Published in: Annual Meeting of Planetary Geologic Mappers, Issue n/a, 2020, Page(s) 7044
Publisher: Lunar and Planetary Institute

Extensional Landforms as Evidence for Recent Large-Scale Compressional Tectonism?

Author(s): Man B., Rothery D.A., BalmeM.R, Conway S.J., Wright J.
Published in: Annual Meeting of the Mercury Exploration Assessment Group, Issue Annual, 2021, Page(s) n/a
Publisher: USRA
DOI: 10.5281/zenodo.5095712

The art of exploring

Author(s): De Toffoli B., Pozzobon R., Montagna C., Schiavo J., Scotton B.M., Fantino I., Massironi M.
Published in: EPSC, Issue n/a, 2020, Page(s) EPSC2020-892
Publisher: EPSC-Copernicus
DOI: 10.5194/epsc2020-892

Investigating the Neruda-Paramour thrust system, Mercury

Author(s): Man B., Rothery D.A., Balme M.R., Conway S.J. and Wright J.
Published in: EPSC, Issue n/a, 2020, Page(s) EPSC2020-794
Publisher: EPSC-Copernicus
DOI: 10.5194/epsc2020-794

Fluid circulation in the upper Martian crust, Arcadia Planitia (Mars)

Author(s): De Toffoli, B., Bistacchi, A., Mazzarini F., Massironi M
Published in: XVI Congresso Nazionale di Scienze Planetarie, Issue n/a, 2020, Page(s) n/a
Publisher: XVI Congresso Nazionale di Scienze Planetarie
DOI: 10.5281/zenodo.5153181

Geological Mapping of the Derain (H-10) Quadrangle

Author(s): Malliband C.C., Rothery D.A., Balme M.R., Conway S.J.
Published in: Annual Meeting of the Mercury Exploration Assessment Group, Issue Annual, 2021, Page(s) n/a
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Author(s): D.A. Rothery, M.R. Balme, and S.J. Conway
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Author(s): Matteo Massironi, Francesca Altieri, Harald Hiesinger, Nicolas Mangold, Dave Rothery, Angelo Pio Rossi, Matthew Balme, Cristian Carli, Fabrizio Capaccioni, Gabriele Cremonese, Gianrico Filacchione, Stephane Le Mouelic, Vicram Unnithan, and Carolyn Van Der Bogert
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Author(s): Mayssa El Yazidi, Riccardo Pozzobon,Stefano Debei and Matteo Massironi.
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Author(s): Wright, J, Rothery DA, Balme, MR, Conway, SJ
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Author(s): Gebbing T., H. Hiesinger, W. Iqbal, and C. H. van der Bogert
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Author(s): Poehler C. M., H. Hiesinger, and C. H. van der Bogert
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Author(s): Poehler C. M., W. Iqbal, C. H. van der Bogert, H. Hiesinger, A. M. Lewang, C. Rueckert, J. H. Pasckert, M. A. Ivanov, M. Massironi, and the PLANMAP Team
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Author(s): F. Zambon, C. Carli, J. Wright, F. Altieri, L. Giacomini, M. Massironi, F. Capaccioni, D.A. Rothery, G. Cremonese and the PLANMAP Team
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Author(s): L. Giacomini, V. Galluzzi, C. Carli, F. Zambon, M. Massironi, L. Ferranti, P. Palumbo
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Author(s): E. Luzzi, Rossi A.P., Carli C., Altieri F.
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Author(s): Orgel C., Ivanov M. A., Hiesinger H., Pasckert J. H., van der Bogert C. H., and G. Michael
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Author(s): Mayssa El Yazidi, Matteo Massironi
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Author(s): Angelo Pio Rossi, Matteo Massironi, Luca Penasa, Carlos Brandt, Riccardo Pozzobon, Erica Luzzi and the Planmap Consortium
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Author(s): F. Zambon and the WP4/PLANMAP Team
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Author(s): Luzzi E., Rossi, A.P.,
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Author(s): Tognon G., Pozzobon R., Massironi M.
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Author(s): Orgel C., Ivanov M. A., Hiesinger H., Pasckert J. H., van der Bogert C. H., and G. Michael
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Author(s): L. Giacomini, V. Galluzzi, C. Carli, M. Massironi, L. Ferranti, P. Palumbo
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Author(s): Brandt C.H., Rossi A.P., Penasa L., Pozzobon R., Luzzi E., Wright J., Carli C. and Massironi M.
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Author(s): Zambon F., Carli C., Altieri F., Jean-Philippe Combe J-F., van der Bogert C.H., Poehler C.M., Hiesinger H., Le Mouélic S., Mangold N., Caravaca G. and Massironi M.

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Author(s): Mayssa El Yazidi,Riccardo Pozzobon, Stefano Debei, Luca Penasa and Matteo Massironi
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Author(s): Luca Penasa, Riccardo Pozzobon, Marco Franceschi, Barbara De Toffoli, Matteo Massironi, and the PLANMAP team
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Author(s): Ivanov M. A.,Hiesinger H., OrgelC., Pasckert J. H.,van der Bogert C.H., and Head J. W.
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Author(s): Giacomini L., Galluzzi V., Carli C., Zambon F., Massironi M., Ferranti L. and Palumbo P.
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Author(s): Pozzobon R., Pesce D., Massironi M., De Toffoli B.
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Author(s): Gwenael Caravaca , Nicolas Mangold , Stephane Le Mouelic , et al.,
Published in: Lunar and Planetary Science Conference, Issue n/a, 2019, Page(s) n/a
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Author(s): Mège D., Massironi M., De Toffoli B, Gurgurewicz J., Marinangeli L., Pompilio L., Pozzobon R., Davis J., Douté S., Hauber E. Kofman W., Pajola M., Perry J., Pommerol A., Frank S
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Author(s): Tognon G., Pozzobon R., Massironi M.
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Author(s): E. Luzzi, Rossi A.P., Carli C., Altieri F.
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Author(s): Luzzi, Erica; Rossi, Angelo Pio; Pozzobon, Riccardo
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DOI: 10.5281/zenodo.5119586

Using Virtual and Augmented Reality in Planetary Imaging and Mapping ¬ a case study
Author(s): Le Mouélic S., Caravaca G., Mangold N., Wright J., Carli C., Altieri F., Zambon F., Van der Bogert C., Pozzobon R., Massironi M., Rossi A.P., De Toffoli B.
Published in: EPSC, Issue 14, 2020, Page(s) EPSC2020-589
Publisher: EPSC-Copernicus

Datasets

Datasets via OpenAIRE (40)

Arsinoes and Pyrrhae Chaos
Author(s): Erica Luzzi
Published in: Zenodo

Geological Map of the Derain (H10) Quadrangle of Mercury (5 crater class version)
Author(s): Malliband, Christopher C.; Rothery, David A.; Balme, Matthew R.; Conway, Susan J.; Pegg, David L.; Wright, Jack
Published in: Zenodo

PLANMAP - Deliverable D4.3 - Moon/Apollo Basin spectral parameters maps
Author(s): Francesca Zambon; Cristian Carli; Francesca Altieri; Jean-Philippe Combe
Published in: Zenodo

Geo-stratigraphic map of Tsiolkovskiy crater (Moon, Far side)
Author(s): Tognon, Gloria; Zambon, Francesca; Carli, Cristian; Massironi, Matteo; Giacomini, Lorenza; Pozzobon, Riccardo; Salari, Giulia; Tosi, Federico; Combe, Jean-Philippe; Fonte, Sergio
Published in: Zenodo

PLANMAP - Deliverable D2.2 Mercury H-05 Hokusai quadrangle 3 crater classes
Author(s): Wright, Jack; Rothery, David A.; Balme, Matthew R; Conway, Susan C
Published in: Zenodo

Planmap's Deliverable D6.1: 3D geo-models based on multiple datasets of Mars (implicit or explicit modelling)
Author(s): Pozzobon, Riccardo; Penasa, Luca; De Toffoli, Barbara; Rossi, Angelo Pio; Massironi, Matteo
Published in: Zenodo

PLANMAP - Deliverable D4.2 - Moon/Apollo Basin spectral parameters maps - v1, preliminary
Author(s): Francesca Zambon; Cristian Carli; Francesca Altieri
Published in: Zenodo

PLANMAP - Deliverable D2.2 Mercury H-10 Derain quadrangle 5 crater classes
Author(s): Malliband, Christopher C; Rothery, Dav id A.; Balme, Matthew R; Conway, Susan J; Pegg, David L.; Wright, Jack

Published in: Zenodo

PLANMAP - Deliverable D4.3 - Mercury/Rembrandt Basin spectral parameters maps
Author(s): Francesca Zambon; Cristian Carli; Francesca Altieri
Published in: Zenodo

PLANMAP - GIS data and 3D models of Kimberley outcrop area, Gale crater (Mars)
Author(s): CARAVACA, Gwénaël; Le Mouélic, Stéphane; Mangold, Nicolas
Published in: Zenodo

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Software

Software via OpenAIRE (2)

Planmap-Storymaps: latest app release
Author(s): Brandt, Carlos H; Rossi, Angelo Pio
Publisher: Zenodo
DOI: 10.5281/zenodo.4761684; 10.5281/zenodo.3260174

planmap-eu/yutu_radagram_3dmodelling: First release
Author(s): Penasa, Luca; Pozzobon, Riccardo
Publisher: Zenodo
DOI: 10.5281/zenodo.4055214; 10.5281/zenodo.4055213

Other Research Products

Other Research Products via OpenAire (18)

Constructing and deconstructing geological maps: a QGIS plugin for creating topologically consistent geological cartography
Author(s): Penasa, Luca; Frigeri, Alessandro; Pozzobon, Riccardo; Brandt, Carlos H.; De Toffoli, Barbara; Naß, Andrea; Rossi, Angelo Pio; Massironi, Matteo

Sites of geological interest in Kuiper quadrangle (H06)
Author(s): Giacomini, Lorenza; Galluzzi, Valentina; Carli, Cristian; Zambon, Francesca; Massironi, Matteo; Ferranti, Luigi; Palumbo, Pasquale

The art of exploring
Author(s): De Toffoli, Barbara; Pozzobon, Riccardo; Montagna, Carlotta; Schiavo, Jacopo; Scotton, Bianca Maria; Fantino, Ivan; Massironi, Matteo

3D geological model of Rembrandt basin on Mercury and calculation basin infilling volumes
Author(s): Pozzobon, Riccardo; Massironi, Matteo; Penasa, Luca; Ferrari, Sabrina

On the asymmetry of Nathair Facula
Author(s): Rothery, David; Barraud, Océane; Besse, Sebastien; Carli, Cristian; Pegg, David; Wright, Jack; Zambon, Francesca

The Lunar South Pole-Aitken Basin Region: A New Geological Map
Author(s): Poehler, Claudia M.; Ivanov, Mikhail A.; van der Bogert, Carolyn H.; Hiesinger, Harald; Iqbal, Wajiha; Pasckert, Jan Hendrik; Wright, Jack; Head, James W.

Landing site characterization for Tsiolkovskiy crater
Author(s): Tognon, Gloria; Pozzobon, Riccardo; Massironi, Matteo

3D geomodel of the deformed deposits in Crommelin Crater (Mars)
Author(s): Pozzobon, Riccardo; Pesce, Dario; Massironi, Matteo

Geological mapping of Mawrth Vallis, Mars, by PLANMAP
Author(s): Wright, Jack; Balme, Matthew; Davis, Joel; Fawdon, Peter; Rothery, David

Detailed Geological Studies and Absolute Model Ages of the Apollo 15 Landing Site
Author(s): Iqbal, Wajiha; van der Bogert, Carolyn; Hiesinger, Harald

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