



XVIII CONGRESSO NAZIONALE DI SCIENZE PLANETARIE

6-10 Febbraio 2023
Sala dei Notari, Palazzo dei Priori Perugia

Programma



DIPARTIMENTO DI CHIMICA,
BIOLOGIA E BIOTECNOLOGIE



DIPARTIMENTO
DI FISICA E GEOLOGIA



DIPARTIMENTO
DI INGEGNERIA



DIPARTIMENTO
DI INGEGNERIA
CIVILE E AMBIENTALE



PROGRAMMA

6 Febbraio, Lunedì

14:00 – 15:00	Interventi Istituzionali Leonardo Varasano Assessore alla Cultura Comune di Perugia Prof. Alceo Macchioni Direttore Dip. di Chimica e Biologia Prof. Diego Perugini Direttore Dip Fisica e Geologia Prof. Ermanno Cardelli Direttore Ingegneria Prof. Giovanni Gigliotti Dipartimento di Ingegneria Civile ed Ambientale Prof. Fausto Elisei Prorettore Helios Vocca Rappresentanza del Rettore Marco Tavani Presidente INAF	
15:00 – 15:30	Prospettive delle scienze planetarie in Italia	Barbara Negri ASI
15:30 – 15:55	Il Programma di Esplorazione dell'ESA	Raffaele Mugnuolo ASI
15:55 – 16:10	Paving the way for the Italian community towards Mars Sample Return (MSR), the next step in Martian exploration	Francesca Altieri

16:10 – 16:45 Coffee Break

16:45 – 18:30 Sessione 1: Astrochimica - Astrobiologia 1

Chair: Maria Teresa Muscari Tomajoli

16:45 – 17:15	INVITED TALK: From Interstellar Clouds to Planetary Systems: the Astrochemical Thread	Cecilia Ceccarelli IPAG
17:15 – 17:30	Theoretical investigation of formation routes leading to S-bearing species in space via the reactions of electronically excited atoms	Andrea Giustini
17:30 – 17:45	Rotational spectroscopy of pyrrole: a model for astrophysical searches	Assimo Maris
17:45 – 18:00	A laboratory investigation of the reactions N(2D) + benzene and N(2D) + toluene and implications for the atmospheric chemistry of Titan	Gianmarco Vanuzzo
18:00 – 18:15	Detectability of aromatic organics in Sulfates by the Mars 2020 Perseverance rover	Teresa Fornaro
18:15 – 18:30	Survivability of Xhantoria Parietina in simulated Mars conditions for 30days	Christian Lorenz

7 Febbraio, Martedì

9:00 – 10:30 Sessione 1: Astrochimica - Astrobiologia 2

Chair: Teresa Fornaro

09:00 – 09:30	INVITED TALK: Open questions about the origin of life: where to go in Solar System studies	Giovanni Vladilo INAF - OaTs
09:30 – 09:45	Desert cyanobacteria: Lesson learned from astrobiology experiments in low Earth orbit and implications for future missions	Daniela Billi
09:45 – 10:00	Worldwide distribution of acidophilic extremophiles provides insight into future space biology applications	Luca Tonietti
10:00 – 10:15	Eukaryotic organisms exposed to space environment: a focus on the physiological adaptations of the brine shrimps <i>A. Salina</i> to astrobiological studies	M. Teresa Muscari Tomajoli
10:15 – 10:30	Evolution of climate and observational properties of a habitable rocky planet: Earth.	Laura Silva

10:30 – 11:00 Coffee Break

11:00 – 12:00 Sessione 2: Pianeti e Satelliti: Analisi Dati e Modellistica

Chair: Giovanni Munaretto

11:00 – 11:15	Microwave thermal emission from Solar System Planets and CMB calibration	Michele Maris
11:15 – 11:30	Mineralogical mapping of Ceres as revealed by the 1 μm absorption	Giacomo Carrozzo
11:30– 11:45	Volatile emission from a fracture on a planetary surface: a Smoothed-Particle-Hydrodynamics approach	Matteo Teodori
11:45– 12:00	Roughness of planetary surfaces: Hapke theory and statistical multi-facet algorithm. preliminary analysis	Andrea Raponi

12:00 – 14:00 Pausa Pranzo

14:00 – 15:30 Sessione 3: Esopianeti

Chair: Aldo Bonomo / Riccardo Claudi

14:00 – 14:15	Search for and occurrence rate of Jupiter analogues in planetary systems with short period sub-Neptunes	Aldo Bonomo
14:15 – 14:30	Cold Jupiter shaping the formation of Super-Earths	Matteo Pinamonti

	around M dwarfs	
14:30 – 14:45	Responses of Eukaryotic photosynthetic organisms from different systematic groups to a simulated M dwarf starlight	Mariano Battistuzzi
14:45 – 15:00	The GAPS Program at TNG: That strange case of the young planetary system V1298 Tau	Riccardo Claudi
15:00 – 15:15	An Exoplanet Atmosphere as Never Seen Before.	Luigi Mancini
15:15 – 15:30	The HADES Program with HARPS-N@TNG. HADES: THE HARps-n red Dwarf Exoplanet Survey	Laura Affer

15:30 – 16:00 Coffee Break

16:00 – 17:30 Session 4: Mercurio

Chair: Cristina Re

16:00 – 16:30	INVITED TALK: BepiColombo first results of the Cruise phase and Fly-Byes	Anna Milillo INAF-IAPS
16:30 – 16:45	Ca and CaO Mercury exosphere as product of micro-meteoroids and comet stream particles impact	Martina Moroni
16:45 – 17:00	Remote sensing of Mercury Sodium emission and relationship with magnetospheric activity	Stefano Orsini
17:00 – 17:15	Permanent Shadowed regions of Mercury: new hypothesis about water ice origin	Silvia Bertoli
17:15 – 17:30	Spectral detection of Water ice, S-bearing and organic species in Mercury's PSR by SIMBIO-SYS-VIHI on the BepiColombo Mission	Gianrico Filacchione

17:45 – 18:45 Assemblée Generale della Società Italiana di Scienze Planetarie

19:30 Cena Sociale Ristorante del Sole – Via della Rupe 1

8 Febbraio, Mercoledì

9:00 – 10:30 Sessione 5: Piccoli Corpi – Results of the DART/LICIACube Mission 1

Chair: Davide Perna

09:00 – 09:30	INVITED TALK: The Light Italian Cubesat for Imaging of Asteroids in support to the NASA mission DART	Elisabetta Dotto and the LICIACube Team
09:30 – 09:45	Modelling the ejecta plume after the DART impact	Alessandro Rossi
09:45 – 10:00	Color analysis of Dimorphos plume produced by DART impact using Liciacube-Luke data	Giovanni Poggiali
10:00 – 10:15	Towards reconstructing the Dimorphos ejecta plume by means of non-spherical dust simulations and DART-Liciacube data	Stavro Ivanovski
10:15 – 10:30	The shape of Dimorphos as seen by Liciacube-Luke images	Angelo Zinzi

10:30 – 11:00 Coffee Break

11:00 – 12:00 Sessione 5: Piccoli Corpi – Results of the DART/LICIACube Mission 2

Chair: Angelo Zinzi

11:00 – 11:15	Bouncing Boulders: A "secondary plume" from Didymos surface observed by Liciacube-Luke camera after DART impact on Dimorphos's surface	Elena Mazzotta Epifani
11:15 – 11:30	After DART: The Didymos system in the aftermath of the DART event	Simone Ieva
11:30– 11:45	A first assessment on the origin of Didymos and Dimorphos, NASA's DART mission targets	Fabio Ferrari
11:45– 12:00	The boulder size-frequency distribution derived from DART/DRACO images of Dimorphos: Preliminary results	Maurizio Pajola

12:00 – 14:00 Pausa Pranzo

14:00 – 15:30 Sessione 6: Piccoli Corpi – Artificiali e Naturali 1

Chair: Alessandro Rossi

14:00 – 14:30	INVITED TALK: On the synergy between Planetary Science and Space engineering in the study and exploitation of natural routes	Elisa Maria Alessi CNR - IMATI
14:30 – 14:45	The LICIACube extended mission as an imminent	Ettore Perozzi

	impactor sentinel	
14:45 – 15:00	The NEOROCS "Rapid-Response Experiment"	Davide Perna
15:00 – 15:15	NEOROCS: Investigating the physical nature of the small asteroid population	Vasiliki Petropoulou
15:15 – 15:30	Analysis of spectral variability of asteroid 3200 Phaethon in preparation to DESTINY+ space mission.	Marianna Angrisani

15:30 – 16:00 Coffee Break

16:00 – 16:45 Session 6: Piccoli Corpi – Artificiali e Naturali 2

Chair: Simone Ieva

16:00 – 16:15	VIS-IR imaging spectroscopy of Martian Meteorites	Simone De Angelis
16:15 – 16:30	Spectroscopic and nanoscale mineralogical investigation of Ryugu returned samples	Marco Ferrari
16:30 – 16:45	ProDisCo: A Systematic Comparison Between Measured Molecular Abundances in Comets and Protoplanetary Disks	Manuela Lippi

16:45 – 18:00 Session 7: Meteore e Meteoriti 1

Chair: Anna Barbaro

17:00 – 17:15	Water reactivity on Schreibersite: from Phosphites to Posphates	Stefano Pantaleone
17:15 – 17:30	Multi-collector ^{40}Ar - ^{39}Ar dating in planetary geosciences: dating terrestrial impact structures	Gianfranco Di Vincenzo
17:30 – 17:45	Early differentiation of planetesimals: insights from melting experiments of an L6 ordinary chondrite	Matteo Masotta
17:45 – 18:00	Glass of possible impact origin from Pica (Chile)	Gabriele Giuli

9 Febbraio, Giovedì

9:00 – 9:45 Sessione 7: Meteore e meteoriti 2

Chair: Matteo Masotta

09:00 – 09:15	Cavezzo: fall, recovery and analysis of the first Italian meteorite found by PRISMA	Daniele Gardiol
09:15 – 09:30	Carbon phases in Ureilites with increasing the degree of shock: the example of five frontier mountain Ureilites.	Anna Barbaro
09:30 – 09:45	The chondritic impactor origin of the Ni-rich component in australasian tektites/microtektites	Luigi Folco
9:45 – 10:00	The Brachinites and Brachinite-like ungrouped achondrites connection: insights from Spinels mineral-chemistry	Tiberio Cuppone

10:00 – 10:30 Sessione 8: Dischi Protoplanetari e fasi primordiali

Chair: Manuela Lippi

10:00 – 10:15	Protoplanetary disks around solar-analogues: factories of pre-biotic molecules?	Claudio Codella
10:15 – 10:30	Kinematics perturbation in the protoplanetary disk of AS 209:signature of a giant protoplanets at 100 au	Davide Fedele

10:30 – 11:00 Coffee Break

11:00 – 12:00 Sessione 9: Marte 1

Chair: Ilaria Di Pietro

11:00 – 11:15	Buried faults, Sedimentary sequences and Playa environments	Gene Walter Schmidt
11:15 – 11:30	Methane on Mars: possible geomorphic indicators of Methane emission in three impact craters	Elettra Mariani
11:30– 11:45	Application of the Minimum Noise Fraction technique to Exomars/TGO-NOMAD LNO channel nadir data: SNR enhancement evaluation	Fabrizio Oliva
11:45– 12:00	Water cycle and aerosols at Mars with the NOMAD spectrometer onboard ExoMars TGO	Giuliano Liuzzi

12:00 – 14:00 Pausa Pranzo

14:00 – 15:15 Sessione 9: Marte 2

Chair: Simone Silvestro

14:00 – 14:15	Structural mapping and stress analysis to unravel the polyphasic tectonic history of the Claritas Fossae, Mars	Evandro Balbi
14:15 – 14:30	Did MARSIS find liquid water beneath the Martian south polar layered deposits?	Roberto Orosei
14:30 – 14:45	High-resolution compositional map and subsurface investigation of a martian valley close to Olympia Planum	Nicole Costa
14:45 – 15:00	debate of the large martian ripples	Hezy Yizhaq
15:00 – 15:15	Study of the dust lifting and electrification physics by means of martian analogues	Gabriele Franzese

15:15 – 15:45 Coffee Break

15:45 – 17:00 Sessione 10: Il Sistema Giovinio

Chair: Mauro Ciarniello

15:45 – 16:00	A preliminary study of Ganymede's energetic ion environment to be investigated with JUICE	Christina Plainaki
16:00 – 16:15	Observability of Callisto's exosphere with MAJIS/JUICE	Emiliano D'Aversa
16:15 – 16:30	Combining remote sensing and laboratory analysis to search for organics on the surface of Europa	Silvia Pagnoscin
16:30 – 16:45	The Jupiter's hot spots as observed by Juno-JIRAM: limb-darkening in thermal infrared	Davide Grassi

16:45 – 17:45 Sessione Europlanet a cura di Stavro Ivanovski e Federica Duras

18:00 – 20:30 Sessione Poster – Apericena e Premiazione Poster

10 Febbraio, Venerdì

9:00 – 10:30 Sessione 11: Planetologia Sperimentale 1

Chair: Alessandro Pisello

09:00 – 09:15	Water desorption from lunar sample analogues to support the ESA PROSPECT instrument development	John Brucato
09:15 – 09:30	Dielectric spectroscopy analyses of lunar regolith simulants for the radar detection of water ice on the Moon	Chloe Helena Martella
09:30 – 09:45	Alteration of organic matter on Ceres: results from laboratory studies on the complex geo-chemical history of the innermost dwarf planet	Maria Cristina De Sanctis
09:45 – 10:00	Preliminary results on the infrared H ₂ -H ₂ and H ₂ -He experimental collision induced absorption coefficients	Stefania Stefani
10:00 – 10:15	Hypervelocity impacts on Comet Interceptor dust impact sensor and counter for dust shield and detection system assessment	Stefano Ferretti
10:15 _ 10:30	The spectral and chemical changes of atmosphere-less surfaces induced by ion bombardment	Riccardo Urso

10:30 – 11:00 Coffee Break

11:00 – 11:45 Sessione 11: Planetologia Sperimentale 2

Chair: Eliana La Francesca

11:00 – 11:15	Low temperature reflectance spectra of NH ₄ ⁺ minerals in the VNIR: effect of phase transitions for planetary investigation	Maximiliano Fastelli
11:15 – 11:30	UV irradiation experiments of organo-sulfate martian analog samples to support detection of organics on Mars by the NASA MARS2020 and ESA ExoMars rovers	Andrew Alberini
11:30– 11:45	Simulating icy-world surfaces in the laboratory: NIR spectra of natron, mirabilite and epsomite dissolved in water	Daniele Fulvio

11:45 – 12:30 Candidature Consiglio Direttivo SISF; Candidature Sede Edizione 2024; Premiazione della migliore presentazione

12:30 Fine Congresso

Poster Session
Giovedì 9 Febbraio ore 18:30 – 20:30

1	The key role of silicon in astrochemistry	Matteo Michielan
2	Photo-processing and thermal desorption of acetaldehyde, acetonitrile, and water ice mixtures on olivine grains: TPD and mass spectra analyses	Maria Angela Corazzi
3	Thermal desorption of PA(N)Hs-water ice mixtures from dust grains	Valeria Lino
4	The use of the correlation matrix for Martian life detection	Andrea Meneghin
5	Combined crossed-beams and theoretical investigation of the O(3p,1d) + acrylonitrile reactions and implications for Extraterrestrial environments	Giacomo Pannacci
6	Computed binding energies distribution of relevant S-bearing species at interstellar icy grains	Vittorio Barioso
7	Testing alternative theories of gravity with the Bepicolombo mission: the case of Brans-Dicke theory	Miriam Falletta
8	Discovery of the TOI-411 system: a super-Earth and two sub-Neptunes orbiting a bright, nearby, sun-like star	Laura Inno
9	SETI within 30 parsecs from Earth	Graziano Chiaro
10	Dart-vetter: a deep learning tool for automatic vetting of TESS candidates.	Stefano Fiscale
11	Petro-mineralogical and geochemical study of lunar meteorite NWA 13859	Riccardo Avanzinelli
12	Early differentiation of planetesimals: insights from melting experiments of an L6 ordinary chondrite	Matteo Masotta
13	The NWA12800: an extremely interesting CV3 carbonaceous chondrite	Andrea Vitrano
14	The LUMIO cubesat: detecting meteoroid impacts on the lunar farside	Fabio Ferrari
15	Meteorite-dropping bolides observation with the PRISMA fireball network	Dario Barghini
16	MIDIR spectral characterization of Ol-bearing ungrouped achondrites	Cristian Carli
17	Microscopic impactor debris at Kamil crater, Egypt: the origin of the Fe-Ni oxide spherules	Luigi Folco
18	Mineralogical characterization of the fusion crust of the Cavezzo L5 chondrite	Marianglona Rondinelli
19	Mineralogical characterization and microchemical analysis of the Alfianello, Monte Milone, and Siena ordinary chondrites.	Valeria De Santis
20	First find of ringwoodite in the Alfianello L6 ordinary chondrite	Laura Carone
21	Preliminary characterization of two Rantila fall fragments.	Anna-Irene Landi
22	Alteration fronts in reckling peak 17085 CM carbonaceous chondrite: an investigation of the aqueous alteration process in the CMs parent asteroid.	Anna Musolino
23	Geochemical characterisation and Cr isotope composition of libyan desert glasses and ordinary chondrites: preliminary data	Martina Casalini

24	VIS–MIR spectral characterization of the NWA 12184 meteorite and modifications induced by solar wind irradiation experiment	Anna Galiano
25	New impact crater catalogue of the moon based on the deep learning approach	Riccardo La Grassa
26	Martian surface photometry with TGO/Cassis: current results and future perspectives	Giovanni Munaretto
27	Dielectric properties of sodium chloride doped ice for the characterization of Europa’s ice shell	Alessandro Brin
28	Unveiling the chemistry of nitriles in titan’s atmosphere: the reaction of excited atomic nitrogen, N(2d), with cyanoacetylene (HC3N), acrylonitrile (C2H3CN) and acetonitrile (CH3CN)	Luca Mancini
29	Aeolian landforms in the exomars landing site, a regional perspective	Simone Silvestro
30	Ubiquity of landslides in the solar system	Maria Teresa Brunetti
31	Geological mapping and preliminary spectral analysis of mare Ingenii basin.	Gloria Tognon
32	Possible volcanic origin for “mounds” of the Hypanis fan system, Mars: magmatic vs sedimentary.	Agnese Caramanico
33	On the nature of the dark resistant unit (DRU) in the oxia planum area, Mars	Michelangelo Formisano
34	Terrestrial and martian paleo-hydrologic environments: systematic comparison by means of prisma and crism hyperspectral data	Angelo Zinzi
35	A grid of climate models for the Noachian Mars using EOS-ESTM	Paolo Simonetti
36	MESSENGER grand finale at Mercury: surface age and property characterization	Elena Martellato
37	Geological and structural mapping of the Michelangelo (H-12) quadrangle of Mercury: preliminary results	Salvatore Buoninfante
38	Geological studies with MATISSE: a Mercury surface study case	Veronica Camplone
39	Landing site characterization of Marius Hills pit (Moon): a feasibility evaluation for the ESA lunar caves CDF study.	Riccardo Pozzobon
40	The planetary mapping and GIS laboratory at INAF-IAPS.	Alessandro Frigeri
41	Geological mapping of sedimentary sequences of impact craters in Arabia Terra: a test site for standardized planetary maps.	Lucia Marinangeli
42	Clay-rich deposits in Oxia Planum and north Xanthe terra: an updated overview of the infrared data in context with ExoMars rover mission	Jeremy Brossier
43	Improvement of the MARSIS on-board SW, on the Mars Express mission. Preliminary scientific results on Phobos and Mars.	Andrea Cicchetti
44	Eolo megaripple archive: mapping the recent aeolian deposits to support the luminescence investigation on Mars	Lucia Marinangeli
45	The surface of mercury investigated by means of principal component analysis on MASCS/MESSENGER data.	Anna Galiano
46	Structural analysis of the Discovery quadrangle (H-11), Mercury.	Antonio Sepe
47	Segmentation analysis of selected lobate scarps on Mercury	Luigi Ferranti

48	LICIACube activities at ASI-SSDC: processing, calibration, archiving and analysis of images	Angelo Zinzi
49	Visible spectroscopic survey of near earth objects from the Asiago observatory in the framework of the NEOROCS project	Monica Lazzarin
50	A database for the thermal analysis of the comet 67p	Edoardo Rognini
51	NEOROCS: the EU H2020 programme for NEO rapid observation, characterization, and key simulations.	Elisabetta Dotto
52	Future perspectives of the NEO physical properties database by the NEOROCS EU project	Ilaria Di Pietro
53	Search and study for meteorites analogues to Didymos in preparation to the Milani/HERA investigation.	Giuseppe Massa
54	Laboratory investigation of icy surface analogs of some solar system objects	Alessandra Migliorini
55	Visible and near-infrared spectroscopy of Mars analogues in support of the ESA's ExoMars rover mission.	Simone Filomeno
56	Reflectance spectra of mascagnite and salammoniac minerals by varying viewing geometry.	Maximiliano Fastelli
57	Using the DAVIS laboratory setup to simulate and test MA_MISS surveys on rock samples.	Lorenzo Rossi
58	Stereo validation activities for the new stereo hyperspectral pushbroom camera: HYPPOS	Cristina Re
59	Dust detector on-board Milani cubesat: VISTA FM calibration and instrument main goals in the framework of HERA mission.	Chiara Gisellu
60	The PVRG spectral database of lab-made volcanic products on the SSDC infrastucure: a new catalog of reference spectra to characterize volcanic terrains on planetary bodies.	Alessandro Pisello
61	DAEDALUS Cam: an immersive stereoscopic camera to explore lunar caves	Claudio Pernechele
62	Astroinformatic and digital planetology laboratory in INAF	Romolo Politi
63	Making Janus ready to launch: on ground calibration campaign	Livio Agostini
64	TRIS: transmission and illumination system.	Eliana La Francesca
65	Ma_Miss and scientific activities in support of the exploration of the martian surface and subsurface in the next decade	Cristina De Sanctis
66	SHRK the high-contrast imager and spectrograph for LBT	Dino Mesa
67	Contamination-free manipulation of extraterrestrial dust particles using acoustic tweezers	Stefano Ferretti
68	Comparison of infrared spectral features from planetary surfaces and laboratory rock samples	Matteo Bisolfati
69	Finding long-period solar system or interstellar objects with machine learning in LSST.	Antonio Vanzanella
70	The age of Saturn's Rings: Clues from Ring-Moon composition	Mauro Ciarniello