

# MONTHLY NEWSLETTER

INAF Osservatorio Astrofisico di Arcetri

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## REFEREED PUBLICATIONS

**L. Podio, A. Garufi, C. Codella, D. Fedele, E. Bianchi, F. Bacciotti, C. Ceccarelli, C. Favre, S. Mercimek, K. Rygl, L. Testi**  
*ALMA chemical survey of disk-outflow sources in Taurus (ALMA-DOT) II: Vertical stratification of CO, CS, CN, H<sub>2</sub>CO, and CH<sub>3</sub>OH in a Class I disk*

Astronomy & Astrophysics, in press

<https://arxiv.org/abs/2008.12648>

**G. Poggiali, J. R. Brucato, E. Dotto, S. Ieva, M. A. Barucci, M. Pajola**

*Temperature dependent mid-infrared (5–25  $\mu$ m) reflectance spectroscopy of carbonaceous meteorites and minerals: Implication for remote sensing in Solar System exploration*

Icarus, in press

<https://www.sciencedirect.com/science/article/pii/S0019103520303961?via%3Dihub>

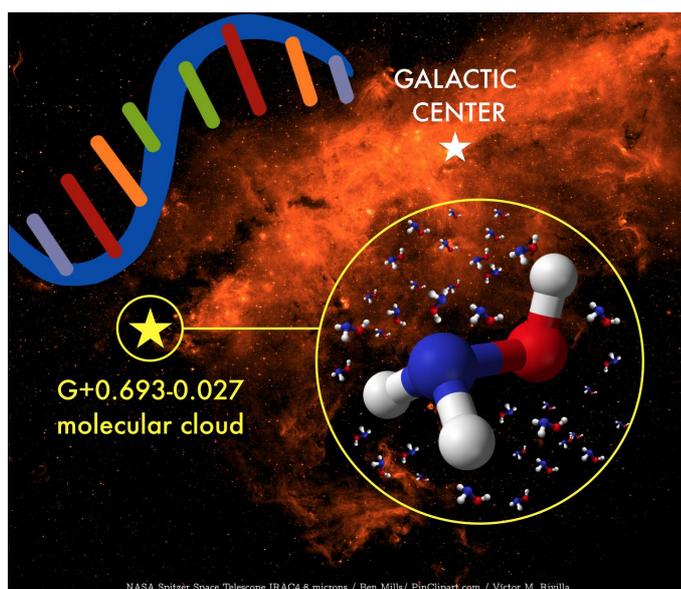
**V. M. Rivilla, J. Martín-Pintado, I. Jiménez-Serra, S. Martín, L. F. Rodríguez-Almeida, M. A. Requena-Torres, F. Rico-Villas, S. Zeng, C. Briones**

*Prebiotic Precursors of the Primordial RNA World in Space: Detection of NH<sub>2</sub>OH*

The Astrophysical Journal Letters (2020), 899, 2

<https://ui.adsabs.harvard.edu/abs/2020ApJ...899L..28R/abstract>

Media INAF: <https://www.media.inaf.it/2020/08/25/nube-molecola-idrossilamina/>



**J. Soldateschi, N. Bucciantini, L. Del Zanna**

***Axisymmetric equilibrium models for magnetised neutron stars in scalar-tensor theories***

Astronomy & Astrophysics (2020), 640, 44

[https://www.aanda.org/articles/aa/full\\_html/2020/08/aa37918-20/aa37918-20.html](https://www.aanda.org/articles/aa/full_html/2020/08/aa37918-20/aa37918-20.html)

M. Melosso, L. Bizzocchi, A. Adamczyk, E. Canè, P. Caselli, **L. Colzi**, L. Dore, B. M. Giuliano; J.C. Guillemin, M. A. Martin-Drumel, O. Pirali, A. Pietropolli Charmet, D. Prudenzano, **V. M. Rivilla**, F. Tamassia

***Extensive ro-vibrational analysis of deuterated-cyanoacetylene (DC3N) from millimeter-wavelengths to the infrared domain***

Journal of Quantitative Spectroscopy and Radiative Transfer (2020), in press

<https://ui.adsabs.harvard.edu/abs/2020JQSRT.25407221M/abstract>

L. Naponiello, L. Betti, A. Biagini, **M. Focardi**, E. Papini, R. Stanga, D. Trisciani, M. Agostini, V. Noce, L. Fini, E. Pace

***Photometry of exoplanetary transits at Osservatorio Polifunzionale del Chianti***

Experimental Astronomy, in press

<https://link.springer.com/article/10.1007/s10686-020-09669-6>

S. Viti, **F. Fontani**, I. Jimenez-Serra

***A chemical study of carbon fractionation in external galaxies***

Monthly Notices of the Royal Astronomical Society, in press

<https://arxiv.org/pdf/2007.12405.pdf>

S. Benatti, M. Damasso, S. Desidera, F. Marzari, K. Biazzo, R. Claudi, M. P. Di Mauro, A. F. Lanza, M. Pinamonti, D. Barbato, L. Malavolta, E. Poretti, A. Sozzetti, L. Affer, A. Bignamini, A. S. Bonomo, F. Borsa, M. Brogi, G. Bruno, I. Carleo, R. Cosentino, E. Covino, G. Frustagli, P. Giacobbe, M. Gonzalez, R. Gratton, A. Harutyunyan, C. Knapic, G. Leto, M. Lodi, A. Maggio, J. Maldonado, L. Mancini, A. Martinez Fiorenzano, G. Micela, E. Molinari, M. Molinaro, D. Nardiello, V. Nascimbeni, I. Pagano, M. Pedani, G. Piotto, **M. Rainer**, G. Scandariato

***The GAPS programme at TNG. XXIII. HD 164922 d: close-in super-Earth discovered with HARPS-N in a system with a long-period Saturn mass companion***

Astronomy & Astrophysics (2020), 639, 50

<https://www.aanda.org/articles/aa/abs/2020/07/aa37939-20/aa37939-20.html>

G. Guilluy, V. Andretta, F. Borsa, P. Giacobbe, A. Sozzetti, E. Covino, V. Bourrier, L. Fossati, A.S. Bonomo, M. Esposito, M.S. Giampapa, A. Harutyunyan, **M. Rainer**, M. Brogi, G. Bruno, R. Claudi, G. Frustagli, A. F. Lanza, L. Mancini, **L. Pino**, E. Poretti, G. Scandariato, L. Affer, C. Baffa, A. Baruffolo, S. Benatti, K. Biazzo, A. Bignamini, W. Boschini, I. Carleo, M. Ceconi, R. Cosentino, M. Damasso, S. Desidera, G. Falcini, A.F. Martinez Fiorenzano, A. Ghedina, E. González-Álvarez, J. Guerra, N. Hernandez, G. Leto, A. Maggio, L. Malavolta, J. Maldonado, G. Micela, E. Molinari, V. Nascimbeni, I. Pagano, M. Pedani, G. Piotto, A. Reiners

***The GAPS programme at TNG. XXII. The GIARPS view of the extended helium atmosphere of HD 189733 b accounting for stellar activity***

Astronomy & Astrophysics (2020), 639, 49

<https://www.aanda.org/articles/aa/abs/2020/07/aa37644-20/aa37644-20.html>

L. Bizzocchi, D. Prudenzano, **V. M. Rivilla**, A. Pietropolli-Charmet, B. M. Giuliano, P. Caselli, J. Martín-Pintado, I. Jiménez-Serra, S. Martín, M. A. Requena-Torres, F. Rico-Villas, S. Zeng, J. Guillemin

***Propargylimine in the laboratory and in space: millimetre-wave spectroscopy and its first detection in the ISM***

Astronomy & Astrophysics (2020), 640, 98

<https://ui.adsabs.harvard.edu/abs/2020A%26A...640A..98B/abstract>

J. D. Moses, E. Antonucci, J. Newmark, F. Auchère, S. Fineschi, **M. Romoli**, D. Telloni, G. Massone, L. Zangrilli, **M. Focardi**, F. Landini, M. Pancrazzi, G. Rossi, A. M. Malvezzi, D. Wang, J. Leclech, J. Moalic, F. Rouesnel, L. Abbo, A. Canou, N. Barbey, C. Guennou, J. M. Laming, J. Lemen, J. Wuelsel, J. L. Kohl, L. D. Gardner

***Global helium abundance measurements in the solar corona***

Nature Astronomy, in press

<https://www.nature.com/articles/s41550-020-1156-6>

Media INAF: <https://www.media.inaf.it/2020/08/07/score-herschel-nasa/>

V. Noce, D. Loreggia, G. Capobianco, S. Fineschi, A. Bemporad, M. Casti, S. Buckley, **M. Romoli**, **M. Focardi**, M. Belluso, C. Thizy, A. Hermans, D. Galano, J. Versluys

***Metrology on-board PROBA-3: the shadow position sensors subsystem***

Advances in Space Research, in press

<https://www.sciencedirect.com/science/article/abs/pii/S0273117720305627?via=ihub>

**S. Bianchi**

***Le comete a Firenze e la fine del mondo nel 1872***

Giornale di Astronomia (2020), 46/3, 92

<http://www.libraweb.net/articoli.php?chiave=202008803&rivista=88>

## TECHNOLOGICAL MILESTONES

### PLATO - Instrument Control Unit (ICU) first switch-on

On August 26<sup>th</sup>, the first engineering model of the PLATO ICU has been switched on at INAF/IAPS in Rome. It represents a fundamental milestone for the overall PLATO Program development and accomplishment, as the ICU is the main computer on Payload side and the only electrical interface towards the Service Module (platform) on-board computer and mass memory subsystems. Most of the PLATO ICU HW and part of the on-board SW have been developed by Kayser Italia in Livorno (<http://www.kayser.it>) with a contribution from the IWF Institute in Graz (Austria), while the Unit's Application SW is developed by INAF/IAPS in Rome and the University of Wien.

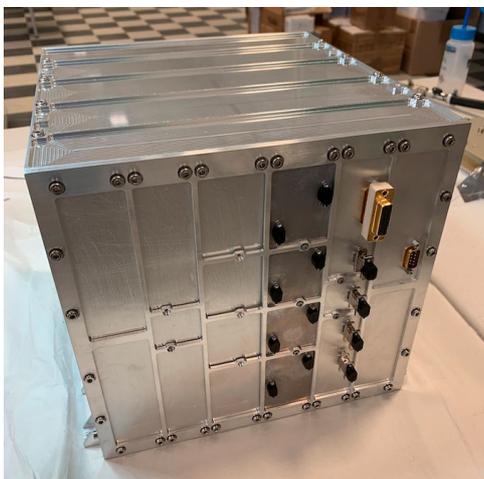
PLATO is the third Medium-class Mission of the European Space Agency (ESA), aimed at the discovery and characterisation of exoplanets and exoplanetary systems exploiting the transits method, down to Earth-like twins orbiting stars similar to our own Sun. Italy, with ASI and INAF, plays a fundamental technological role as it is responsible for the provision to the PLATO Mission Consortium (PMC) of the ICU along with the telescopes, and is providing the PLATO targets input catalog and the contribution to the coordination of the overall Consortium thanks to the Mission CoPi-ship.

INAF Arcetri Astrophysical Observatory is involved with **Mauro Focardi** in the coordination of the ICU design and development activities, as he's working as ICU System Engineer.

<https://platomission.com/2018/05/14/instrument-control-unit-icu/>

Media INAF: <https://www.media.inaf.it/2020/09/01/plato-ha-acceso-il-cervello/>

Global Science: <https://www.globalscience.it/22004/plato-testato-il-computer-di-bordo-icu/>



Credits: PLATO/INAF-IASP