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PUBLICATIONS LIST**Peer-referred journals**

12. A. Valantinas, J. Mustard, V. Chevrier, N. Mangold, J. Bishop, A. Pommerol, P. Beck, O. Poch, D. Applin, E. Cloutis, T. Hiroi, K. Robertson, S. Alonso Perez-Lopez, R. Ottersberg, G. Villanueva, **A. Stcherbinine**, M. Patel, N. Thomas (2025). *Detection of ferrihydrite in Martian red dust records ancient cold and wet conditions on Mars*. Nature Communications, 16, 1712. doi:10.1038/s41467-025-56970-z
11. **A. Stcherbinine**, M. J. Wolff, C. S. Edwards, O. Korablev, A. Fedorova, A. Trokhimovskiy (2025). *On the impact of the vertical structure of Martian water ice clouds on nadir atmospheric retrievals from simultaneous EMM/EXI and TGO/ACS-MIR observations*. Icarus, 425, 116335. doi:10.1016/j.icarus.2024.116335
10. M. D. Smith, G. M. Martínez, E. Sebastián, M. T. Lemmon, S. A. Atwood, D. Toledo D. Viúdez-Moreiras, **A. Stcherbinine**, J. A. Rodriguez-Manfredi, M. de la Torre Juárez (2025). *The diurnal variation of dust and water ice aerosol optical depth at Jezero Crater observed by MEDA/TIRS over a full Martian year*. Icarus, 425, 116313. doi:10.1016/j.icarus.2024.116313
9. D. Toledo, P. Rannou, V. Apéstigue, P. Rodriguez-Velose, I. Arruego, G. Martínez, L. Tamppari, A. Munguira, R. Lorentz, **A. Stcherbinine** et al. (2024). *Drying of the Martian Mesosphere During Aphelion Induced by Lower Tropospheric Temperatures*. Communications Earth & Environment, 5, 717. doi:10.1038/s43247-024-01878-7
8. A. Määttänen, A. Fedorova, M. Giuranna, J. Hernández-Bernal, Y. Leseigneur, F. Montmessin, K. S. Olsen, A. Sánchez-Lavega, **A. Stcherbinine**, et al. (2024). *Dust and clouds on Mars: the view from Mars Express*. Space Science Reviews, 220, 63. doi:10.1007/s11214-024-01092-z
7. **A. Stcherbinine**, Y. Langevin, J. Carter, M. Vincendon, Y. Leseigneur, O. Barraud (2024). *OMEGA-Py: Python Tools for OMEGA Data*. Journal of Open Source Software, 9(99), 6566. doi:10.21105/joss.06566
6. E. Clavé, O. Beyssac, S. Bernard, C. Royer, [...], & **the SuperCam Science team** (2024). *Radiation-induced alteration of apatite on the surface of Mars: first in situ observations with SuperCam Raman onboard Perseverance*. Scientific Reports, 14, 11284. doi:10.1038/s41598-024-61494-5
5. **A. Stcherbinine**, C. S. Edwards, M. D. Smith, M. J. Wolff, C. Haberle, et al. (2023). *Diurnal and Seasonal Mapping of Martian Ices with EMIRS*. Geophysical Research Letters, 50, e2023GL103629. doi:10.1029/2023GL103629
4. **A. Stcherbinine**, F. Montmessin, M. Vincendon, M. J. Wolff, M. Vals, et al. (2022). *A Two Martian Years Survey of Water Ice Clouds on Mars with ACS onboard TGO*. Journal of Geophysical Research: Planets, 127, e2022JE007502. doi:10.1029/2022JE007502
3. **A. Stcherbinine**, M. Vincendon, F. Montmessin, P. Beck (2021). *Identification of a new spectral signature at 3 μm over Martian northern high latitudes: implications for surface composition*. Icarus, 369, 114627. doi:10.1016/j.icarus.2021.114627
2. **A. Stcherbinine**, M. Vincendon, F. Montmessin, M. J. Wolff, O. Korablev, A. Fedorova, et al. (2020). *Martian water ice clouds during the 2018 global dust storm as observed by the ACS-MIR channel onboard the Trace Gas Orbiter*. Journal of Geophysical Research: Planets, 125, e2019JE006300. doi:10.1029/2019JE006300

1. M. Vincendon, C. Pilorget, J. Carter, **A. Stcherbinine** (2019). *Observational evidence for a dry dust-wind origin of Mars seasonal dark flows*. *Icarus*, 325, 115-127. [doi:10.1016/j.icarus.2019.02.024](https://doi.org/10.1016/j.icarus.2019.02.024)

PhD thesis

1. **A. Stcherbinine** (2021). Study of Martian aqueous signature through infrared spectroscopy: from clouds to polar regions alteration. *Université Paris-Saclay*. [NNT:2021UPASP064](https://nnt.uma.ac.uk/2021UPASP064). [tel-03380027](https://tel.archives-ouvertes.fr/tel-03380027).

Oral communications in international conferences

22. **A. Stcherbinine**, F. Montmessin, L. Baggio, M. Vincendon, M. Wolff, O. Korablev, A. Fedorova, A. Trokhimovskiy, G. Lacombe (2025). *A three Martian years climatology of the vertical properties of Martian water ice clouds with TGO/ACS-MIR*. EPSC-DPS 2025, Helsinki, 7–12 September 2025, [EPSC-DPS2025-1495](https://www.epsc2025.eu/abstract/EPSC-DPS2025-1495).
21. **A. Stcherbinine**, J. Deighan, Z. Hallemeyer, C. S. Edwards, M. J. Wolff, S. Atwood, M. D. Smith, M. M. Osterloo (2025). *Martian Mesospheric Clouds as Seen by the Three Instruments of the Emirates Mars Mission over One Martian Year*. 56th LPSC, The Woodlands, 10–14 March 2025, [abstract 1868](https://www.lpsc2025.org/abstract/1868).
20. **A. Stcherbinine**, C. S. Edwards, C. Haberle, M. D. Smith, L. Lange, C. Pilorget (2024). *Spectroscopic Characterization and Evolution of Martian Nighttime CO₂ Frost at Equatorial Latitudes with EMM/EMIRS*. EPSC 2024, Berlin, 8–13 September 2024, [EPSC2024-50](https://www.epsc2024.eu/abstract/EPSC2024-50).
19. O. Barraud, J. Carter, M. Vincendon, **A. Stcherbinine**, R. Sheppard (2024). *Spectral variability in the south polar region of Mars*. EPSC 2024, Berlin, 8–13 September 2024, [EPSC2024-921](https://www.epsc2024.eu/abstract/EPSC2024-921).
18. D. Toledo, P. Rannou, V. Apestigue, R. Rodriguez-Veloso, I. Arruego, G. Martinez, L. Tamppari, A. Munguira, R. Lorenz, **A. Stcherbinine**, et al. (2024). *Decline in Water Ice Abundance in the Martian Mesosphere during Aphelion*. EPSC 2024, Berlin, 8–13 September 2024, [EPSC2024-504](https://www.epsc2024.eu/abstract/EPSC2024-504).
17. C. Quantin-Nataf, L. Mandon, E. Dehouck, O. Forni, P. Beck, F. Poulet, C. Royer, J. Johnson, E. Clave, O. Beyssac, N. Mangold, **A. Stcherbinine**, et al. (2024). *Orbital infrared spectroscopy: lessons learned from in situ SCAM VISIR spectrometer in Jezero*. Tenth International Conference on Mars, Pasadena, 22–25 July 2024, [abstract 3390](https://www.tenthmars.org/abstract/3390).
16. H. Al-Mazmi, J. Deighan, C. S. Edwards, M. Wolff, S. Jain, G. Holsclaw, M. Chaffin, R. J. Lillis, M. Fillingim, K. Chirakkil, S. Raghuram, S. England, D. A. Brain, M. Osterloo, R. Shuping, M. Smith, F. Forget, S. Atwood, A. Fernando, **A. Stcherbinine**, S. Fan, B. Guha, C. Gebhardt (2024). *Results from the Emirates Mars Mission Hope Probe*. Tenth International Conference on Mars, Pasadena, 22–25 July 2024, [abstract 3409](https://www.tenthmars.org/abstract/3409).
15. O. Korablev, F. Montmessin and **the ACS Team** (2024). *The Mars atmosphere as revealed by ACS/TGO ExoMars experiment*. 45th COSPAR Scientific Assembly, Busan, 13–21 July 2024, [B4.3-0004-24](https://www.cosparsci.org/abstract/B4.3-0004-24).
14. R. J. Lillis, H. Al-Mazmi, J. Deighan, C. S. Edwards, M. J. Wolff, S. Jain, G. Holsclaw, M. Chaffin, M. Fillingim, K. Chirakkil, S. Raghuram, S. England, D. A. Brain, M. Osterloo, R. Shuping, M. Smith, F. Forget, S. Atwood, A. Fernando, **A. Stcherbinine**, S. Fan, B. Guha, C. Gebhardt (2024). *Surveying the Martian Atmosphere from the Surface to Space with the Emirates Mars Mission*. 55th LPSC, The Woodlands, 11–15 March 2024, [abstract 2664](https://www.lpsc2024.org/abstract/2664).
13. **A. Stcherbinine**, J. Carter, Y. Langevin, M. Vincendon, et al. (2023). *OMEGA-Py: Python Tools for OMEGA Data – v2.3*. 6th Planetary Data Workshop, Flagstaff, 26–28 June 2023, [abstract 7007](https://www.pdw2023.org/abstract/7007).
12. N. M. Smith, K. Saboi, **A. Stcherbinine**, C. S. Edwards (2023). *A Martian Year of Infrared Atmospheric Spectra from EMIRS*. 6th Planetary Data Workshop, Flagstaff, 26–28 June 2023, [abstract 7087](https://www.pdw2023.org/abstract/7087).
11. **A. Stcherbinine**, C. S. Edwards, M. J. Wolff, E. S. Altunaiji, et al. (2023). *Diurnal and Seasonal Mapping of Martian Ices with EMM/EMIRS*. EGU General Assembly 2023, Vienna, 24–28 April 2023, [EGU23-9770](https://www.egu2023.eu/abstract/EGU23-9770).

10. A. Almansoori, M. Rothman, D. Brain, M. J. Wolff, **A. Stcherbinine**, J. Deghan (2023). *Properties of Limb Clouds at Mars determined from the Emirates Mars Mission (EMM) eXploration Imager (EXI)*. EGU General Assembly 2023, Vienna, 24–28 April 2023, [EGU23-15008](#).
9. **A. Stcherbinine**, C. S. Edwards, M. J. Wolff, E. S. Altunaiji, et al. (2022). *Martian Surface Ice Mapping from EMM/EMIRS Temperature Retrievals*. 2022 AGU Fall Meeting, Chicago, 12–16 December 2022, [abstract P12C-04](#).
8. E. S. Altunaiji, **A. Stcherbinine**, C. S. Edwards, M. D. Smith, M. J. Wolff (2022). *Martian Surface Ice Mapping from EMM/EXI Observations*. 2022 AGU Fall Meeting, Chicago, 12–16 December 2022, [abstract P12C-03](#).
7. O. Barraud, J. Carter, M. Vincendon, **A. Stcherbinine**. *Spectral variability of the south polar region of Mars and implications for hydration and sulfate mineralogy*. 16th EPSC, Granada, 18–23 September 2022, [EPSC2022-847](#).
6. **A. Stcherbinine**, F. Montmessin, M. Vincendon, M. J. Wolff et al. *1.5 Martian Years of Monitoring of the Martian Water Ice Clouds with TGO/ACS-MIR*. 7th International Workshop on the Mars Atmosphere: Modelling and Observations, Paris, 14–17 June 2022, [abstract 3204](#).
5. **A. Stcherbinine**, F. Montmessin, M. Vincendon, M. J. Wolff et al. *Monitoring of Martian water ice clouds over one Martian Year with TGO/ACS-MIR*. 24th EGU General Assembly, Vienna, 23–27 May 2022, [abstract 1114](#).
4. Y. Leseigneur, M. Vincendon, **A. Stcherbinine**. *Global monitoring of atmospheric dust with OMEGA/MarsExpress over 2004-2010*. EPSC Virtual Meeting, 13–24 September 2021, [EPSC2021-568](#).
3. O. Korablev, F. Montmessin, A. Fedorova, A. Trokhimovskiy, M. Luginin, N. Ignatiev, **A. Stcherbinine**, et al. *The first year of ACS/TGO ExoMars observations. Overview of results*. EPSC-DPS Joint Meeting 2019, Geneva, 15–20 September 2019, [EPSC-DPS2019-1524](#).
2. **A. Stcherbinine**, M. Vincendon, F. Montmessin, M. J. Wolff, O. Korablev, A. Fedorova, et al. *Martian Aerosols in the 3 μm Spectral Range, During and Outside the 2018 Global Dust Event Based on the TGO/ACS-MIR Channel*. 9th International Conference on Mars, Pasadena, 22–25 July 2019, [abstract 6097](#).
1. **A. Stcherbinine**, M. Vincendon, F. Montmessin, O. Korablev, A. Fedorova, A. Trokhimovskiy, G. Lacombe, et al. *The behaviour of Martian Aerosols in the 3 μm spectral range, during and outside the 2018 global dust event based on the TGO/ACS-MIR channel*. 21st EGU General Assembly, Vienna, 7–12 April 2019, [abstract 13656](#).

Poster communications in international conferences

21. **A. Stcherbinine**, Y. Langevin, J. Carter, M. Vincendon, Y. Leseigneur, O. Barraud, F. Schmidt (2025). *The OMEGA-Py Python module: a complete and easy way to work with OMEGA/MEX observations*. EPSC-DPS 2025, Helsinki, 7–12 September 2025, [EPSC-DPS2025-1434](#).
20. G. Le Bail, J. Lasue, **A. Stcherbinine**, Y. Leseigneur, T. Bertrand, T. Gautier (2025). *A new reference surface albedo map of Mars : An improved OMEGA/Mars Express albedo map at 1.08 μm* . EPSC-DPS 2025, Helsinki, 7–12 September 2025, [EPSC-DPS2025-1459](#).
19. Y. Leseigneur, G. Le Bail, T. Gautier, J. Lasue, T. Bertrand, L. Fourgeaud, **A. Stcherbinine**, et al. (2025). *MIRS/MMX: an imaging spectrometer to observe the Martian aerosols*. EPSC-DPS 2025, Helsinki, 7–12 September 2025, [EPSC-DPS2025-1731](#).
18. L. Montabone, A. Cardesin-Moinelo, C. Newman, L. Neary, J. Hernandez-Bernal, I. Thomas, G. Liuzzi, M. Patel, B. Sanchez-Cano, M. Lopez-Valverde, R. Lillis, H. Nakagawa, and **the MACAWS team** (2025). *The Science Case for the MARS Constellation for Atmosphere and space Weather (MACAWS) mission concept*. EPSC-DPS 2025, Helsinki, 7–12 September 2025, [EPSC-DPS2025-2067](#).

17. Y. Leseigneur, L. Fourgeaud, T. Gautier, J. Lasue, **A. Stcherbinine**, et al. (2024). *Preparing Martian Atmospheric Observations with MIRS, the MMX Imaging Spectrometer*. EPSC 2024, Berlin, 8–13 September 2024, [EPSC2024-456](#).
16. **A. Stcherbinine**, M. J. Wolff, C. S. Edwards, O. I. Korablev, A. A. Fedorova, A. Trokhimovskiy (2024). *Simultaneous EMM/EXI and TGO/ACS Observations of Martian Water Ice Clouds: Combining Observing Geometries to Improve the Retrievals*. Tenth International Conference on Mars, Pasadena, 22–25 July 2024, [abstract 3047](#).
15. **A. Stcherbinine**, Y. Langevin, J. Carter, M. Vincendon, Y. Leseigneur, O. Barraud (2024). *OMEGA-Py: A New All-in-One Python Solution for OMEGA/MEX Data*. Tenth International Conference on Mars, Pasadena, 22–25 July 2024, [abstract 3048](#).
14. N. M. Smith, C. S. Edwards, H. Al-Mazmi, S. Anwar, S. Atwood, P. R. Christensen, S. Dickensied, C. Haberle, D. Noss, M. M. Osterloo, K. Rios, M. D. Smith, **A. Stcherbinine**, C. A. Wolfe, P. F. Wren (2024). *Emirates Mars Mission (EMM): Three Years Around Mars With EMIRS*. Tenth International Conference on Mars, Pasadena, 22–25 July 2024, [abstract 3460](#).
13. **A. Stcherbinine**, C. S. Edwards, C. Haberle, M. D. Smith, et al. (2023). *Characterization of Martian NightTime CO₂ Frost at Equatorial Latitudes with EMM/EMIRS*. 2023 AGU Fall Meeting, San Francisco, 11–15 December 2023, [abstract EP31D-2124](#).
12. M. J. Wolff, R. Shuping, F. Forget, M. D. Smith, **A. Stcherbinine**, et al. (2023). *More Than One Martian Year of Observations by the Emirates eXploration Imager (EXI): Seasonal and Interannual Trends in the Diurnal Behavior of Water Ice Clouds*. 2023 AGU Fall Meeting, San Francisco, 11–15 December 2023, [abstract P51F-2757](#).
11. **A. Stcherbinine**, C. S. Edwards, K. Saboi, N. M. Smith, C. Haberle (2023). *A Faster Way to Account for Pixel Footprint Projection on Planetary Surfaces with Python: the SPiP Module*. 6th Planetary Data Workshop, Flagstaff, 26–28 June 2023, [abstract 7008](#).
10. L. Montabone, A. Kleinboehl, M. D. Smith, C. S. Edwards, F. Forget, D. Kass, **A. Stcherbinine** (2023). *Reconstructing Martian Year 36 column dust optical depth maps using EMM/EMIRS and MRO/MCS*. EGU General Assembly 2023, Vienna, 24–28 April 2023, [EGU23-10341](#).
9. J. Deighan, S. A. Atwood, D. Brain, M. Chaffin, C. S. Edwards, S. England, M. O. Fillingim, G. Holsclaw, S. Jain, R. J. Lillis, F. H. Lootah, H. R. Almatroushi, H. A. AlMazmi, N. S. Al Mheiri, M. M. Osterloo, M. D. Smith, **A. Stcherbinine**, M. J. Wolff (2022). *Identification of Mesospheric Clouds in Dayside Disk Images from the Emirates Mars Mission*. 2022 AGU Fall Meeting, Chicago, 12–16 December 2022, [abstract P42F-2458](#).
8. **A. Stcherbinine**, M. J. Wolff, C. S. Edwards, et al. *First Cross EMM/EXI and TGO/ACS-MIR Observations of Martian Water Ice Clouds*. 7th International Workshop on the Mars Atmosphere: Modelling and Observations, Paris, 14–17 June 2022, [abstract 3507](#).
7. O. Korablev, F. Montmessin and **The ACS Team**. *Mars Atmosphere as Seen by Atmospheric Chemistry Suite Onboard ExoMars TGO*. 7th International Workshop on the Mars Atmosphere: Modelling and Observations, Paris, 14–17 June 2022, [abstract 1004](#).
6. **A. Stcherbinine**, M. Vincendon, F. Montmessin, P. Beck. *The Martian 3 Micrometers Northern Ring: a Spectral Witness of Recent Surface Alteration Processes under Polar Latitudes*. 53rd LPSC, The Woodlands, 7–11 March 2022, [abstract 1479](#).
5. **A. Stcherbinine**, M. Vincendon, F. Montmessin, P. Beck. *Evidence of an Additional North Polar Component in the Martian 3 Microns Water Band Observed by OMEGA*. 52nd LPSC, Virtual Conference, 15–19 March 2021, [abstract 1423](#).

4. Y. Leseigneur, M. Vincendon, **A. Stcherbinine**. *Martian Dust Dynamics Constrained by OMEGA/MARS EXPRESS Orbital Data*. 52nd LPSC, Virtual Conference, 15–19 March 2021, [abstract 1471](#).
3. **A. Stcherbinine**, M. Vincendon, F. Montmessin. *Martian surface aqueous alteration from the study of the combined evolution of the 1.9 and 3 microns band with OMEGA*. EPSC Virtual Meeting, 21 September – 9 October 2020, [EPSC2020-738](#).
2. **A. Stcherbinine**, M. Vincendon, F. Montmessin. *On the Origin of the Increase of the Surface Aqueous Alteration in the Martian Polar Regions*. 51st LPSC, The Woodlands, 16–20 March 2020, [abstract 1969](#).
1. M. Vincendon, C. Pilorget, J. Carter, **A. Stcherbinine**. *The Rise and Fall of RSL*. 9th International Conference on Mars, Pasadena, 22–25 July 2019, [abstract 6087](#).

Software

2. **A. Stcherbinine**, Y. Langevin, J. Carter, M. Vincendon, Y. Leseigneur, O. Barraud, F. Schmidt (2025). *OMEGA-Py: Python tools for OMEGA data*. (v3.2). Zenodo. [doi:10.5281/zenodo.7818828](https://doi.org/10.5281/zenodo.7818828)
1. **A. Stcherbinine** (2023). *SPiP: Spacecraft Pixel footprint Projection*. (v1.2). Zenodo. [doi:10.5281/zenodo.7714204](https://doi.org/10.5281/zenodo.7714204)

Colloquiums

3. *The 3 μ m Northern Ring: a Martian polar tale*. Lowell Observatory, Flagstaff, USA, 9 February 2023.
2. *Two years of water ice clouds in the Martian atmosphere*. Space Science Center, University of New Hampshire, USA, 12 October 2022.
1. *The Martian 3 microns band: from clouds to surface aqueous alteration*. IPAG, Université Grenoble-Alpes, France, 19 October 2020.

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