

Seventh international workshop on the Mars atmosphere: Modelling and observations

Paris, June 14-17 2022

Poster Sessions Program

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The recommended poster size is about 90 cm wide x 100-120 cm high (i.e. A0 portrait format).

- First authors whose last name begins with **[A-J]**: poster up from Tuesday morning to Wednesday afternoon (Poster Session on Tuesday June 14, 17:30- 20:00)
- First authors whose last name begins with **[K-Z]**: poster up from Thursday morning to Wednesday afternoon (Poster Session on Thursday June 16, 17:30- 20:00)

• **STATUS REPORTS: MODELS, INSTRUMENTS, AND DATABASES**

[Mars Atmosphere Simulations with The ROCKE-3d GCM: Sensitivity to Interactive H₂O Snow and Radiatively Active Dust Cycle.](#)

I. Aleinov, J. P. Perlwit, K. Tsigaridis, S. D., Guzewich, M. J. Way, E. T. Wolf.

[Simulating Mars' climate using the Met Office Unified Model.](#)

D. McCulloch

[GEM-MARS Database for Interpolated Atmospheres](#)

J. Erwin, F. Daerden, L. Neary, L. Trompet, A. C. Vandaele, S. Viscardy

[Mars Atmosphere as Seen by Atmospheric Chemistry Suite Onboard ExoMars TGO.](#)

O. Korabiev, F. Montmessin and the ACS team

[NOMAD on Exomars Trace Gas Orbiter: Observations, Calibration, and Publicly Available Data.](#)

I. R. Thomas, L. Trompet, Y. Willame, A. Piccialli, J.T. Erwin, A.C. Vandaele, B. Ristic, S. Robert, Z.Flimon, F. Vanhellefont, F. Daerden, L. Neary, S. Viscardy, C. Depiesse), S. Aoki, M.R. Patel, J.J. Lopez Moreno, G. Bellucci,

[Emirates Mars Mission 2020: Emirates Exploration Imager \(EXI\) Status Update.](#)

M. J. Wolff, M. Al Shamsi, C. Jeppesen, A. R. Jones, M.M. Osterloo, R. Shuping, C. Edwards, J. Espejo, C. Fisher, J. Knavel, E. Pilinski, A. Fernando

[Visualizing and Analyzing Martian Atmospheric Data in JMARS.](#)

S.L. Dickenshied, C.S. Edwards, P.R. Christensen, S. Anwar, D.D. Noss, M.M. Osterloo

[MeteoMars, a Tool to Explore Meteorological Events on Mars.](#)

I. Ordóñez-Etxebarria, A.Sánchez-Lavega, T. Ordorika, R. Hueso

• **SURFACE METEOROLOGY AND BOUNDARY LAYER**

[Mars 2020 MEDA Measurements of Near Surface Atmospheric Temperatures at Jezero.](#)

A. Manguira, R. Hueso, A. Sánchez-Lavega, M. de la Torre-Juarez, G. Martínez, C. Newman, J. Pla-García, D. Banfield, A. Vicente-Retortillo, A. Lepinette, J. A. Rodríguez-Manfredi, B. Chide, T. Bertrand, M. Lemmon, E. Sebastian, S. Navarro, J. Gómez-Elvira, J. Torres, J. Martín-Soler, J. Romeral, R. Lorenz

[Albedo and Thermal Inertia at Jezero Crater During the First 350 Sols of the Mars 2020 Mission.](#)

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Conrad, F. Jordan, A.M. Harri, M. Genzer, M. Hieta, J. Poulko, M. P. Zorzano, M. Hecht, M. Siegler, M. Torre-Juárez, J.A. Rodríguez-Manfredi

[More than one Martian Year of Meteorology Observed by the Insight Lander.](#)

F. Forget, D. Banfield, A. Spiga, E. Millour, A. Borella, L. Lange, C. Newman, D. Viúdez Moreiras, J. Pla-García, S. Navarro, L. Mora Sotomayor, J. Torres, J-A. Rodríguez Manfredi, S. Lewis, R. Lorenz, P. Lognonne, B. Banerdt and the INSIGHT atmosphere team.

[Changes in Surface Albedo Induced by Dust Devils and the MY 36 Ls=155° Dust Storm at Jezero Crater.](#)

A. Vicente-Retortillo, G.M. Martínez, M. T. Lemmon, R. Hueso, R. Sullivan, C. E. Newman, E. Sebastián, D. Toledo, V. Apéstigue, I. Arruego, A. Manguira, A. Sánchez-Lavega, L. Mora-Sotomayor, T. Bertrand, L. K. Tamppari, M. De La Torre Juárez, J.-A. Rodríguez-Manfredi.

[Thermal Inertia at the MSL and Insight Mission Sites on Mars.](#)

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[Interpretation of the Meteorological Environment Changes Experienced by MSL During Mission Traverse Using REMS and MRAMS.](#)

M. Ruíz-Pérez, J. Pla-García, S. Rafkin, G. Martínez, M. de la Torre, J. Gómez-Elvira, J. Rodríguez-Manfredi and the REMS and MSL Science team

[Elevation Dependent Meteorology in Gale Crater.](#)

S. D. Guzewich, M. T. Lemmon, G. Bischof, E. L. Mason, E. Newman, M. I. Richardson, M. de la Torre Juárez

[Optical Atmospheric Effects as Viewed by the MSL ChemCam Remote Micro-Imager.](#)

S. A. Los, H. E. Newsom, L. A. Scuderi (**Abstract only**)

[Preliminary Analysis of Small-scale Turbulence at the InSight Landing Site on Mars.](#)

M. Alfahim, M. Alhmoudi, M. Alawadhi, R.M.B. Young

[Wait a Minute... Martian Wind Autocorrelations.](#)

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[Modelling UV Degradation of Airfall Organic Material at Gale Crater.](#)

A. Das, J. E. Moores, H. M. Sapers, C. L. Smith.

• **ATMOSPHERIC TEMPERATURES AND DYNAMICS**

[Preliminary Results of Atmospheric Parameters Varying with LT around Volcanoes from PFX-MEx Observations.](#)

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[Thermal Structure and Aerosol Content of the Martian Atmosphere from TIRVIM-ACS onboard TGO : An Overview.](#)

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[Using Emirates Mars Infrared Spectrometer \(EMIRS\) Science Observations to Analyze Diurnal Temperatures and Characterize Thermophysical Properties.](#)

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[Expanding the Dataset of Mars Atmospheric Retrievals from MGS TES Using Limb-geometry Bolometer Observations.](#)

E. L. Mason, M. D. Smith, M. J. Wolff

[Integrating In-Situ, Satellite, and Reanalysis Datasets to Assess Temperature Profiles in the Martian Tropics.](#)

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[Assessing Brightness Temperature Sensitivity to Aerosols in the Martian Atmosphere Using the Ensemble Mars Atmosphere Reanalysis System \(EMARS\).](#)

R. P. McMichael, S. J. Greybush, R. J. Wilson

[Assimilation of Temperatures and Column Dust Opacities Measured by ExoMars TGO-ACS-TIRVIM During the MY 34 Global Dust Storm.](#)

R.M.B. Young, E. Millour, S. Guerlet, F. Forget, N. Ignatiev, A.V. Grigoriev, A.V. Shakun, A. Trokhimovskiy, O. Korablev, F. Montmessin

[Internal Dynamical Variability in the NASA Ames Mars General Circulation Models.](#)

A. F. C Bridger, M. A. Kahre, R. J. Wilson

[A Climatology of the Martian Northern Polar Vortex.](#)

P. M. Streeter, S. R. Lewis, J. A. Holmes, K. Rajendran, M. R. Patel

[A Comparison of Annular Modes on Mars and Earth.](#)

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[Characterization of the Martian Mesosphere by LMD-MGCM Simulations Compared to NOMAD/TGO Observations.](#)

F. Gonzalez-Galindo, M.A. Lopez-Valverde, A. Brines, A. Modak, A. Stolzenbach, B. Funke, J.J. Lopez-Moreno, F. Forget, E. Millour, F. Lefèvre, M. Vals, F. Montmessin, M. Patel, G. Bellucci, A.C. Vandaele

[Seasonal and Diurnal Variation of the Middle Atmospheric Thermal Structure.](#)

L. Gkouvelis, A. S. Brecht, R. J. Wilson, C. E. Harman, M. A. Kahre, T. Bertrand, A. Kling

[Thermospheric Structure and Variability of the Mars Terminator from MAVEN/EUVIM Solar Occultations \(Abstract only\).](#)

E. M. B. Thiemann, F. Eparvier, S. Bougher, Collin Payne, Erdal Yiğit, F. Gasperini.

[Non-migrating Atmospheric Tides as a Driver of Variability in the Nightside Martian Ionosphere.](#)

S. A. Thaller, L. Andersson

[Mach and Froude Numbers on Mars.](#)

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[A New Method for Calculating Solar Irradiance at Mars.](#)

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• **GRAVITY WAVES**

[Detection of Gravity Waves on Mars using Themis Band 10.](#)

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[Probing Atmospheric Gravity Waves on Mars' Atmosphere Using Mars Express OMEGA Data.](#)

F. Brasil, P. Machado, G. Gilli, A. Cardesín-Moinelo, J. E. Silva, D. Espadinha, R. Rianço-Silva.

[Gravity Wave Statistics for MY34 and MY35 from the ACS/TGO Measurements.](#)

E. D. Starichenko, A. S. Medvedev, D.A. Belyaev, A. A. Fedorova, O. I. Korablev, A. Trokhimovskiy, F. Montmessin

[Effects of Orographic Gravity Wave Drag in the Martian Atmosphere by Parameterization and Gravity Wave-Resolving Simulations.](#)

A. Kling, R. J. Wilson, A. Brecht, M. Kahre, J. Murphy

[Modeling Impact of Gravity Waves on the Thermosphere of Mars with a Non-Orographic Whole Atmosphere Gravity Wave Scheme: M-GITM. Application for Interpreting Maven Measurements \(Abstract only\).](#)

S. W. Bougher, K. J. Roeten, E. Yiğit, A. S. Medvedev, M. K. Elrod, M. Benna,

[On The Connection Between Martian Gravity Waves, Dust Storms, and Atmospheric Escape \(Abstract only\).](#)
E. Yi•it, A. S. Medvedev, M. Benna

• DUST AND DUST STORMS

[Inside an Active Martian Storm in Jezero Crater \(Abstract only\).](#)

M. T. Lemmon, M.D. Smith, R. Hueso, A. Munguira, A. Sanchez-Lavega, D. Viudez-Moreiras, A. Vicente-Retortillo, J.A. Rodriguez-Manfredi, G. Martinez, C. Newman, R. Sullivan, D. Banfield, M. Baker, J.F. Bell, J.N. Maki, M. de la Torre-Juarez, L. Tamppari, V. Apestigue, D. Toledo

[Building the Long-term, Multi-instrument Record of Large-scale Dust Events on Mars.](#)

L. Montabone, B. Cantor, F. Forget, E. Millour, D. Kass, A. Kleinboehl, T. Lombard, R. Majid Khalfan Al Bedwawi, M. D. Smith, M. Wolff

[Dust Climatology from NOMAD UVIS Channel.](#)

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[Aerosol Nadir Retrieval from NOMAD/UVIS on board Exomars TGO.](#)

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[Constraining Atmospheric Dust Lifting on Diurnal Timescales from EMIRS Surface Temperature Observations.](#)

C. A. Wolfe, C.S. Edwards, M.D. Smith, M.J. Wolff

[The Exploration of Dust Storm Events Based on Data Products with Sub-diurnal Coverage, Including the Early Emirates Mars Mission Science Phase.](#)

C. Gebhardt, B. K. Guha, R. M. B. Young, M. J. Wolff

[A Dust Storm Database from the Early High-Dust-Loading Season to the Beginning of the Solsticial Pause Based on EMM/EXI Images.](#)

B. K. Guha, C. Gebhardt, R. M. B. Young, M. J. Wolff

[Retrieval of Aerosol Properties at Jezero Crater using the Supercam Instrument on-board the Nasa Mars 2020 Perseverance Rover.](#)

T. Bertrand, M. Wolff, K. Connour, T. McConnochie, T. Fouchet, F. Montmessin, E. W. Knutsen

[Diurnal and Seasonal Variations of Aerosol Optical Depth at Jezero Crater, Mars.](#)

Michael D. Smith, G.M. Martínez, E. Sebastián, V. Apéstigue, I. Arruego, D. Toledo Carrasco, D. Viúdez-Moreiras, J.A. Rodriguez-Manfredi, M.T. Lemmon, M. de la Torre Juarez

[RoadMap - from Lab to Space: Applying an Updated Dust Lifting Equation in the GEM-Mars GCM.](#)

L. Neary, F. Daerden, G. Wurm, T. Becker, J. Teiser, J. Merrison, K. Rasmussen, A. Waza, O. Munoz, J. Martikainen, J. C. Gomez Martin, F. Moreno, T. Jardiel, M. Peiteado, A. C. Caballero, J. T. Erwin, Z. Filmon, A. Piccialli, L. Trompet, Y. Willame, A. C. Vandaele

[A Low Upper Threshold for Saltation-Mediated Triboluminescence at Gale Crater, Mars.](#)

H. M. Sapers, J. L. Kloos, M. Baker, D. M. Fey, H. Kalucha, M. Lemmon, M. Minitti, C. Newman, J. E. Moores

[The Interactive Simulation of Mars Dust Storms with the Mars General Circulation Model Marswrf, at the Resolution of 7.5°×9° \(Latitude ×Longitude\).](#)

K. AlShehhi, C. Gebhardt, R.M.B. Young

[Modeling the Dust Cycle in LMD Mars GCM V6.](#)

A. Bierjon, F. Forget, E. Millour, M. Vals, R. Vandemeulebrouck, J. Naar, T. Pierron, A. Spiga, L. Montabone, M. Wolff, T. Bertrand

[Exploring the Climatic Impact of Bi-Modal Dust Particle Size Distributions during the MY34/2018 Global Dust Storm With the NASA Ames Mars Global Climate Model.](#)

R. A. Urata, T. Bertrand, M. A. Kahre, R. J. Wilson, A. M. Kling, M. Wolff.

[Comparing the MY25 and MY34 Global Dust Storms Using the Ensemble Mars Atmosphere Reanalysis System \(EMARS\).](#)

N. Polek-Davis, S. J. Greybush, R. J. Wilson, R. P. McMichael, H. E. Gillespie

[Parameterization of Cap-Edge Dust Lifting over the Southern Polar Region \(Abstract only\).](#)

K. C. Chow, J. Xiao, Y. M. Wang,

[Surface Dust Redistribution on Mars from Interannual Differences in Temperatures and Albedo.](#)

J. Bapst, S. Piqueux, D.M. Kass, A. Kleinböhl, C.S. Edwards, C. Wolfe

[Characteristics of Dust Devils In Two Pre-Selected Landing Regions of The Tianwen-1 Mission. Comparing Observations and Predictions by Numerical Model \(Abstract only\).](#)

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[Orbit-Spin Coupling and Martian Early-Season Global-scale Dust Storms: Challenges and Opportunities.](#)

J. H. Shirley, J. M. Battalio, D. M. Kass, A.Kleinböhl,N. G. Heavens, S. Piqueux, S. Suzuki, D. J. McCleese, J. T. Schofield

[RoadMap - from Lab to Space: Experimental Scattering Matrices of Martian Dust Analogues.](#)

O. Muñoz, J. Martikainen, J. C. Gomez Martín, T. Jardiel, M. Peiteado, A. C. Caballero, G. Wurm, T. Becker, J. Teiser, J. Merrison, K. Rasmussen, A. Waza, A. C. Vandaele, Y. Willame, L. Neary, F. Daerden, Z. Filmon, A. Piccialli, L. Trompet

[Retrieval of Optical Constants at UV-VIS-NIR for Martian Dust Analogues by Modelling Light Scattering.](#)

J. Martikainen, J. C. Gómez-Martín, O. Muñoz, T. Jardiel, M. Peiteado, Y.Vidrio, M. Wolff, and the RoadMap Team.

[Power Attenuation of Martian Rovers and Landers Solar Panels Due to Dust Deposition.](#)

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[An Improved Model of Water Ice Sublimation on Mars: Validation at the Phoenix Landing Site \(Abstract only\).](#)

A. R. Khuller, G. D. Clow

[A Record of Water-Ice Cloud at the Phoenix Landing Site Derived from Modelling MET Temperature Data.](#)

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[Highlighting Image Processing Techniques Used to Analyze Martian Water Ice Clouds Observed by the NavCam Instrument on board Mars2020 Rover, Perseverance.](#)

P. Patel, L. Tamppari, M. de la Torre Juárez, A. J. Coates, M. Lemmon, J. Moores, C. Campbell

[The Aphelion Cloud Belt Phase Function at Gale Crater.](#)

A.C. Innanen, B.A. Cooper, C.L. Campbell, S.D. Guzewich, J.L. Kloos, H.M. Sapers, J.E. Moores

[Five Martian Years of MSL Gale Crater Cloud Opacity Measurements: Determining a Scattering Phase Function for the Aphelion Cloud Belt.](#)

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A. Stcherbinine, M. J. Wolff, F. Montmessin, M. Vincendon, O. Korablev, A. Fedorova, A. Trokhimovskiy, M. Osterloo, R. Shuping

[Water Vapor Saturation and Ice Cloud Occurrence in the Atmosphere of Mars.](#)

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[Aphelion Equatorial Mesospheric Clouds Observed by MCS.](#)

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[MRO-CRISM 2006-2008 Martian Cloud Map Retrievals.](#)

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[Mars Perihelion Cloud Trails as Revealed by MARCI: Mesoscale Topographically Focused Updrafts and Gravity Wave Forcing of High Altitude Clouds \(Abstract only\).](#)

R. T. Clancy, M. J. Wolff, N. G. Heavens, P. B. James, S. W. Lee, B. J. Sandor, B. A. Cantor, M. C. Malin, D. Tyler, Jr., A. Spiga

[Tropical and Orographic Clouds and their Association with Dust Aerosols.](#)

B. K. Guha, J. Panda, C. Gebhardt, Z. Wu, A. S. Arya

[Reanalysis of Mars Orbiter Laser Altimeter Atmospheric Features with Machine Learning Algorithms.](#)

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[MAVEN/IUVS in the Sky with Dust and Water-Ice Cloud Particles.](#)

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- **WATER VAPOR**

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[A Comparison Between CRISM and CHEMCAM Passive Sky Water Vapor Retrievals over Gale Crater.](#)

A. S. J. Khayat, T. McConnochie, M. D. Smith

[First Results of the Relative Humidity Sensor on Board M2020 Perseverance Rover.](#)

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[First Results from Atmospheric Observations of CO₂, H₂O, and CO from SuperCam on Mars2020-Perseverance Rover.](#)

F. Montmessin, T. McConnochie, T. Fouchet, C. Royer, E. W. Knutsen, T. Bertrand, O. Forni, E. P. Pilleri, O. Gasnault, G. Lacombe, J. Lasue, C. Leggett, M. T. Lemmon, T. Newell, D. M. Venhaus, S. Maurice, R. C. Wiens, the SuperCam Team.

- **TRACE GASES AND PHOTOCHEMISTRY**

[ACS Trace Gas Detection Attempts.](#)

A. Trokhimovskiy, A. A. Fedorova, O. I. Korablev, D. A. Belyaev, A. S. Braude, F. Montmessin, F. Lefèvre, J. Alday, K. S. Olsen,

[Investigating Trace Gases in The Martian Atmosphere Using the ExoMars Trace Gas Orbiter Part 1: Analysis of ESA PSA NOMAD SO Channel Data.](#)

G. H. Cann , I. Waldmann, D.Walton, J.P. Muller.

[Investigating Trace Gases in The Martian Atmosphere Using the ExoMars Trace Gas Orbiter Part 2: TauREM and PSG Retrievals Of ESA PSA NOMAD SO Channel Data.](#)

G. H. Cann , I. Waldmann, D.Walton, J.P. Muller.

[Variations in Vertical CO/CO₂ Profiles in the Martian Mesosphere and Lower Thermosphere Measured by ExoMars TGO/NOMAD: Implications of Variations in Eddy Diffusion Coefficient.](#)

N. Yoshida, H. Nakagawa, S. Aoki, J. Erwin, A. C. Vandaele, F. Daerden, I. Thomas, L. Trompet, S. Koyama, N. Terada, L. Neary, I. Murata, G. Villanueva, G. Liuzzi, M. A. Lopez-Valverde, A. Brines, A. Modak, Y. Kasaba, B. Ristic, G. Bellucci, J. J. Lopez-Moreno, M. Patel

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J. Alday, J. A. Holmes, M. R. Patel, J. P. Mason, A. Trokhimovskiy, A. A. Fedorova, D. A. Belyaev, O. Korablev, F. Lefèvre, F. Montmessin, L. Baggio, A. S. Braude, K. S. Olsen, P. G. J. Irwin, C. F. Wilson

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A. Piccialli, A.C. Vandaele, Y. Willame, A.Määttäänen, L. Trompet, J.T. Erwin, F. Daerden, L. Neary, S. Aoki, S. Viscardy, I.R. Thomas, C. Depiesse, B.Ristic, J.P. Mason, M. R.Patel, M.J. Wolff, A.S.J. Khayat, G. Bellucci, J.-J. Lopez-Moreno

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A. S. Braude, F. Montmessin, L. Verdier, Z. Flimon, F. Lefevre, S. Gupta, S. K. Jain, N. M. Schneider, J. Deighan, F. Y. Jiang, R. Yelle

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Y. Nakamura, F. Leblanc, N. Terada, I. Murata, H. Nakagawa, S. Sakai, S. Hiruba, R. Kataoka, K. Murase

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[Molecular Spectroscopy at the University of Toronto and Future Applications to Mars.](#)

M. O. Ishtiak, O. Colebatch, K. Strong

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G. Liuzzi, G. L. Villanueva, S. W. Stone, S. Faggi, V. Kofman, S. Aoki, J. Alday, L. Trompet, A. C. Vandaele

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[Seasonal Variation of the Cold and Bright Anomalies on the North Polar Layer Deposits.](#)

P. J. Acharya, I. B. Smith

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