

**The Mastcam-Z Radiometric Calibration Targets on NASA's Perseverance Rover:  
Derived Irradiance Time-Series, Dust Deposition, and Performance over the First  
350 Sols on Mars.**

M. Merusi<sup>1</sup>, K.B. Kinch<sup>1</sup>, M.B. Madsen<sup>1</sup>, J.F. Bell III<sup>2</sup>, J.N. Maki<sup>3</sup>, A.G. Hayes<sup>4</sup>, J. Joseph<sup>4</sup>, J.R. Johnson<sup>5</sup>, M. Rice<sup>6</sup>, E.A. Cloutis<sup>7</sup>, D. Applin<sup>7</sup>, J.Z. Kristensen<sup>1</sup>, M.T. Lemmon<sup>8</sup>, A.F. Vaughan<sup>9</sup>, J.I. Núñez<sup>5</sup>, E. Jensen<sup>10</sup>, K. Paris<sup>2</sup>, E. Cisneros<sup>2</sup>, M.R. Kennedy<sup>10</sup>, O. Gasnault<sup>11</sup>.

<sup>1</sup>Niels Bohr Institute, University of Copenhagen, Copenhagen, Denmark

<sup>2</sup>School of Earth and Space Exploration, Arizona State University, Tempe, AZ, USA

<sup>3</sup>Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, USA.

<sup>4</sup>Department of Astronomy, Cornell University, Ithaca, NY, USA

<sup>5</sup>Applied Physics Laboratory, Johns Hopkins University, Laurel, MD, USA

<sup>6</sup>Geology Department, Western Washington University, Bellingham, WA, USA

<sup>7</sup>Department of Geography, University of Winnipeg, Winnipeg, Manitoba, Canada

<sup>8</sup>Space Science Institute, Boulder, CO, USA

<sup>9</sup>USGS Astrogeology Science Center, Flagstaff, AZ

<sup>10</sup>Malin Space Science Systems, San Diego, CA, USA

<sup>11</sup>Institut de Recherche en Astrophysique et Planétologie (IRAP), Université de Toulouse, CNRS, CNES,  
Toulouse – France

**Additional Supporting Information (Files uploaded separately)**

Caption for Table S1

Caption for Movie S2

## Introduction

The files described here as supporting information include a table in comma-separated values (CSV) format containing basic data about all the images from the Perseverance rover shown in the figures of the main article, and a short movie sequence of several color images of Mastcam-Z calibration targets taken from sol 0 to sol 350.

**Table S1.** Basic summary of all the images from Mastcam-Z, WATSON and SuperCam instruments that are shown in the main article as figures. The table is provided as a comma-separated values (CSV) file. From left to right, the columns represent:

- *Image\_ID*: Image ID of the raw image.
- *Sequence*: Number of the image sequence.
- *Sol*: Sol number.
- *LMST*: Local Mean Solar Time (LMST) at which the image was taken on Mars.
- *Instrument*: Instrument (camera) name.
- *ZCAM\_Filter\_name*: Name of the filter used, if the image was taken by Mastcam-Z.
- *Focal\_length\_mm*: Focal length in millimeters, if the image was taken by Mastcam-Z.
- *Figure\_in\_text*: Number of the figure in the main text in which the image is shown.

**Movie S2.** Video sequence of several color (RGB) images of Mastcam-Z calibration targets in chronological order from landing to sol 350. All the images were taken by the left “eye” of Mastcam-Z (filter L0) and have been aligned to reduce shifts and distortions between consecutive frames.