

Supporting Information for

**Nocturnal turbulence at Jezero driven by the onset of a low-level jet as determined from MEDA measurements and modeling**

Jorge Pla-García<sup>1</sup>, A. Manguira<sup>2</sup>, S. Rafkin<sup>3</sup>, C. Newman<sup>4</sup>, T. Bertrand<sup>5</sup>, G. Martínez<sup>6</sup>, R. Hueso<sup>2</sup>, A. Sánchez-Lavega<sup>2</sup>, T. del Río Gaztelurrutia<sup>2</sup>, A. Stott<sup>7</sup>, N. Murdoch<sup>7</sup>, B. Chide<sup>7</sup>, M. de la Torre Juárez<sup>8</sup>, M. Lemmon<sup>9</sup>, D. Viúdez-Moreiras<sup>1</sup>, H. Savijarvi<sup>10</sup>, M. Richardson<sup>4</sup>, M. Marín<sup>1</sup>, E. Sebastian<sup>1</sup>, A. Lepinette-Malvitte<sup>1</sup>, L. Mora<sup>1</sup> and J.A. Rodríguez-Manfredi<sup>1</sup>

<sup>1</sup>Centro de Astrobiología (CAB), CSIC-INTA, Madrid, Spain; <sup>2</sup>Universidad del País Vasco (UPV/EHU), Bilbao, Spain; <sup>3</sup>Southwest Research Institute, Boulder, CO, USA; <sup>4</sup>Aeolis Research, Chandler, AZ, USA; <sup>5</sup>LESIA, Observatoire de Paris, France; <sup>6</sup>Lunar and Planetary Institute, Houston, TX, USA; <sup>7</sup>ISAE-SUPAERO, Université de Toulouse, 31055 Toulouse, France; <sup>8</sup>Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, USA; <sup>9</sup>Space Science Institute, Boulder, CO, USA; <sup>10</sup>Finnish Meteorological Institute, Helsinki, Finland.

**Contents of this file**

Figures S1 to S7.

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

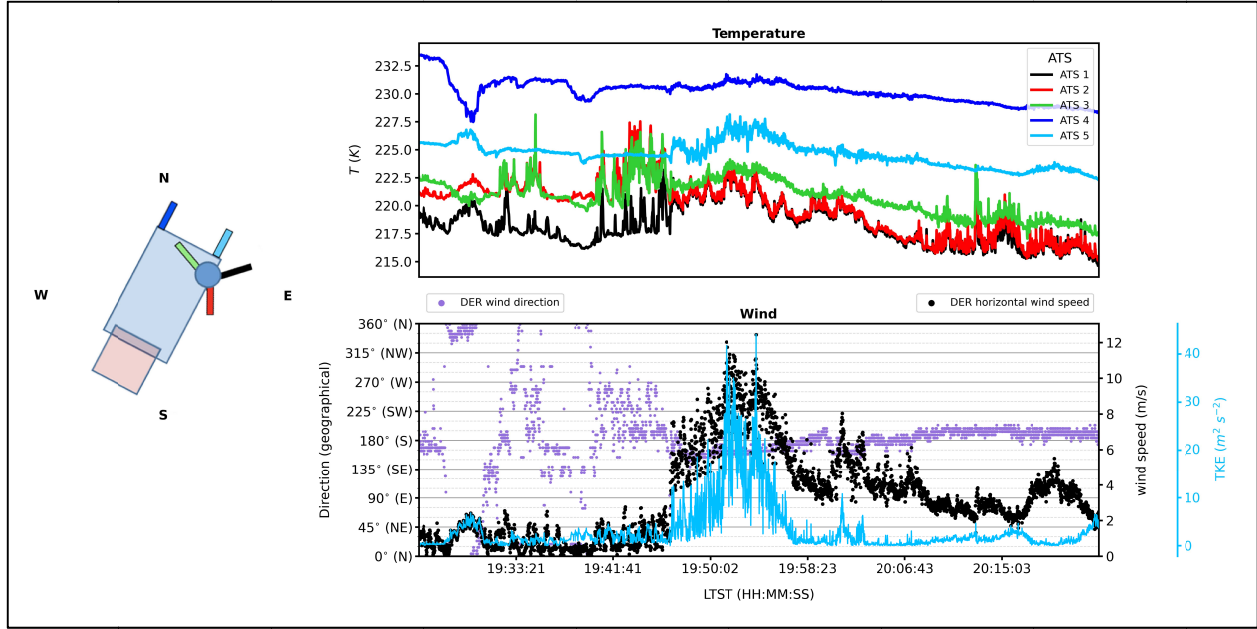
The MRAMS atmospheric circulation animations associated with nocturnal turbulence at Jezero can be found, in the online version, at:

[https://data.boulder.swri.edu/jpla/Jezero\\_nocturnal\\_turbulence\\_movies/](https://data.boulder.swri.edu/jpla/Jezero_nocturnal_turbulence_movies/)

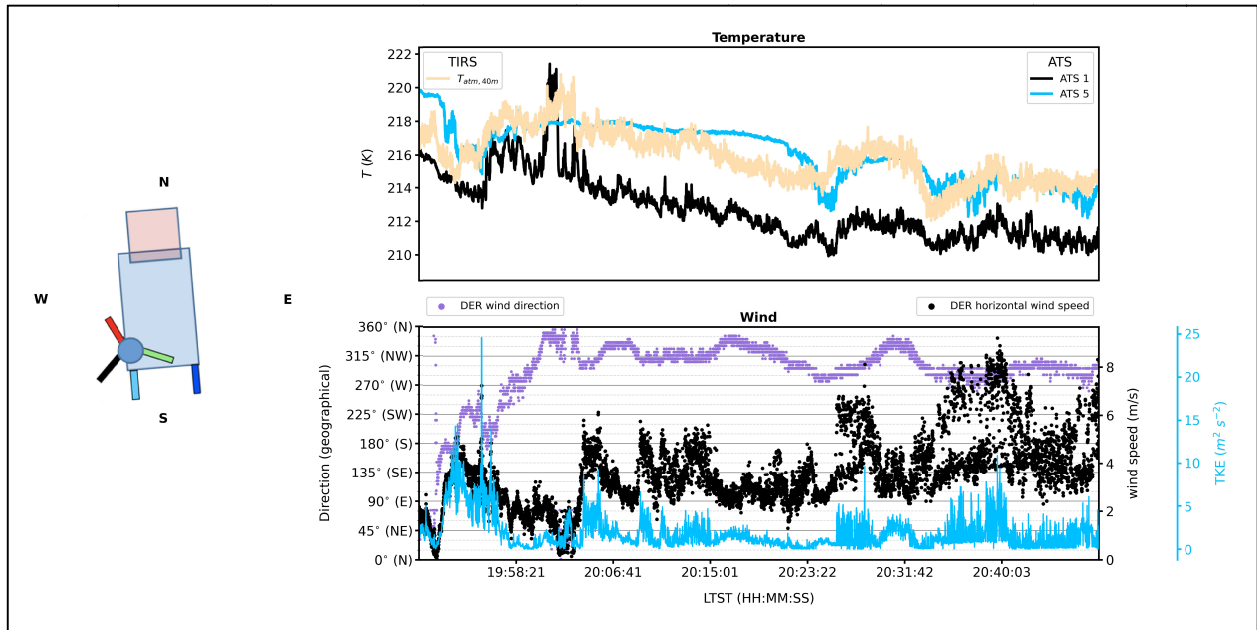
Readme file describes the content of each animation like x-y axis labels, Mars 2020 Perseverance rover landing site location inside Jezero crater (77.45°E, 18.44°N), etc.

**Introduction**

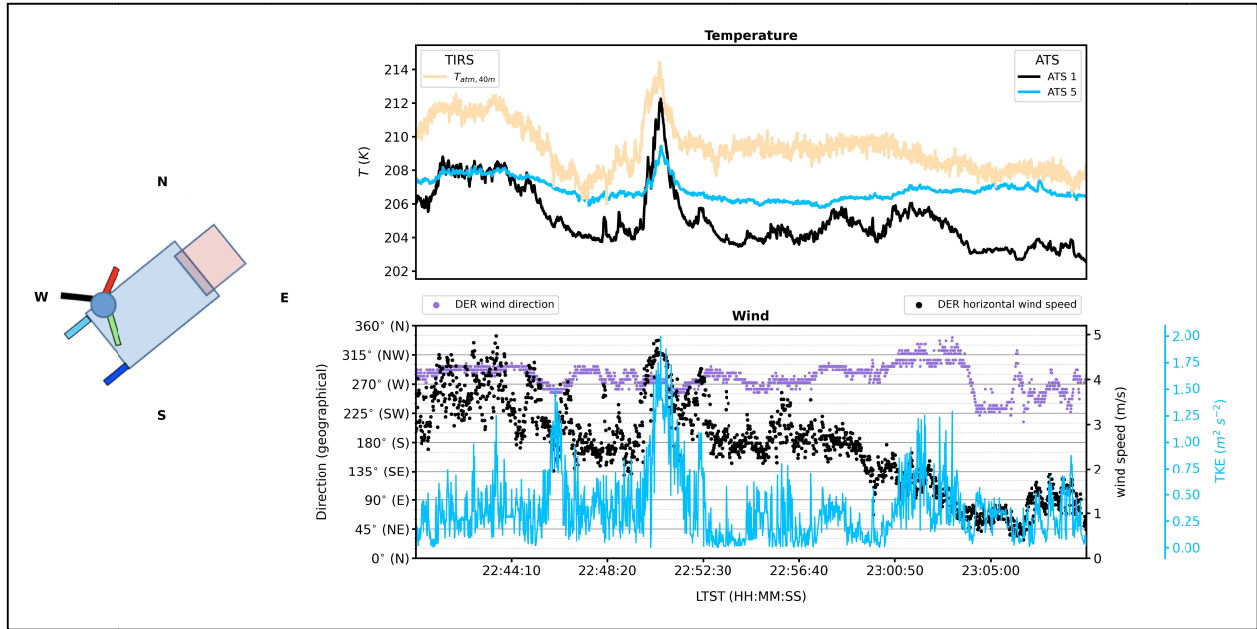
The supporting information for this manuscript includes ten figures (Figs. S1 to S7, shown below).



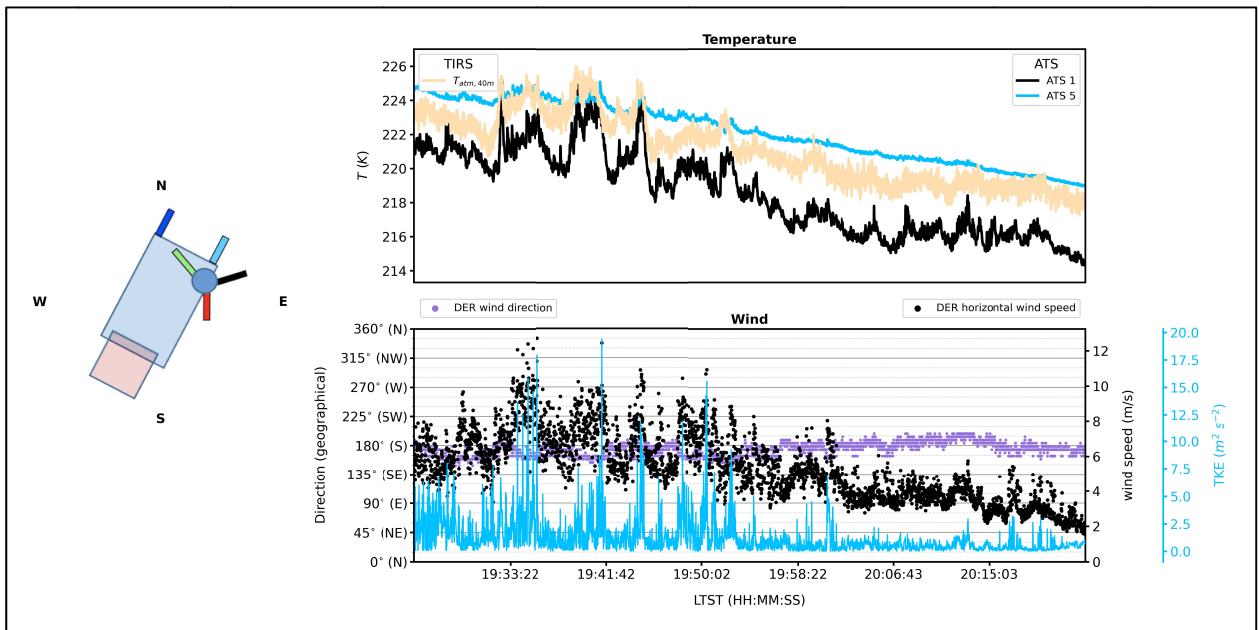
**Figure S1.** Same as Figure 3 but including all ATS sensors (ATS-1 to ATS-5).



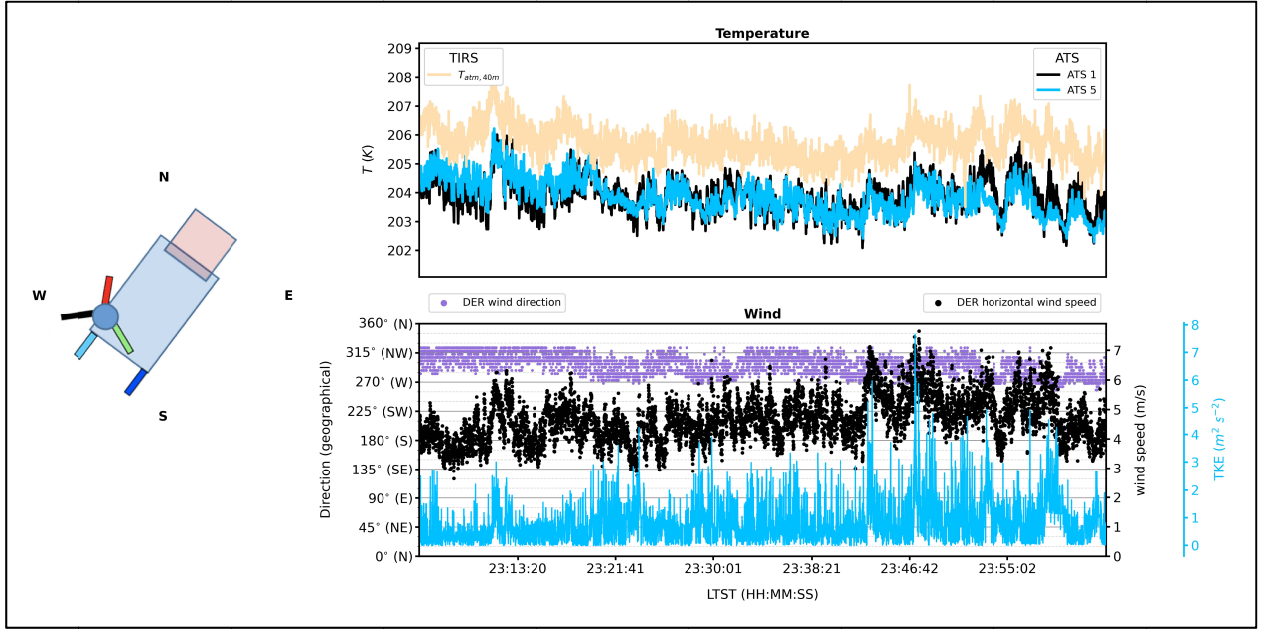
**Figure S2.** Same as Figure 3 but for sol 60 (Ls 34) from 19:50-20:50.



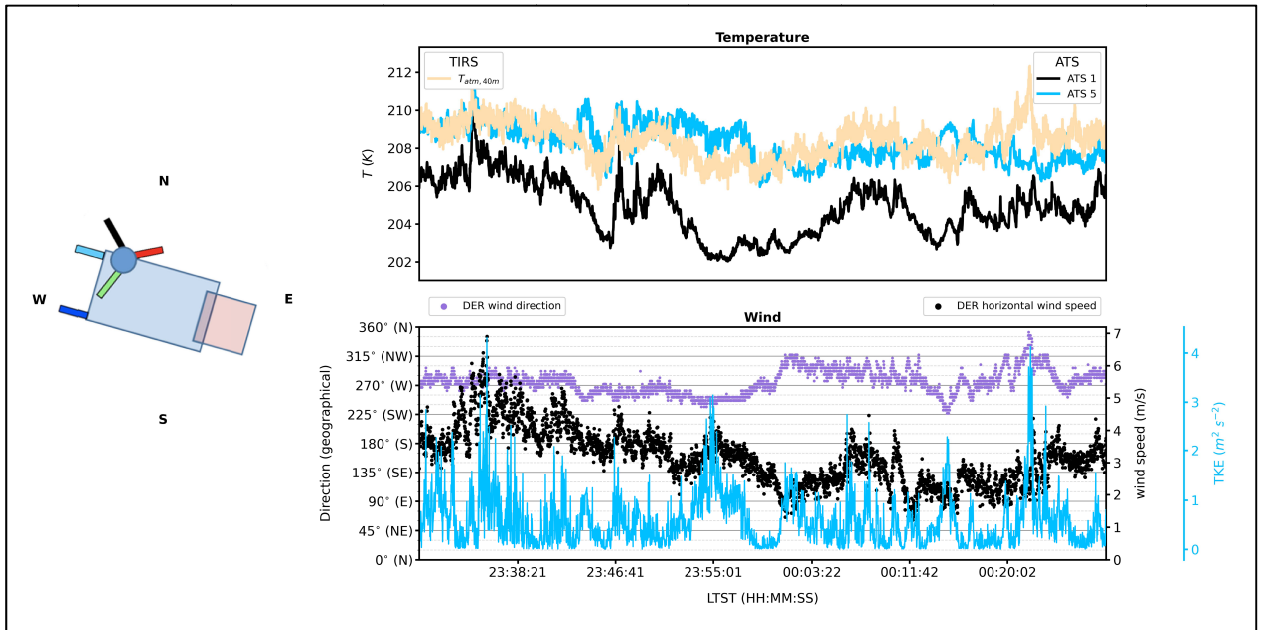
**Figure S3.** Same as Figure 3 but for sol 308 (Ls 150) from 22:40-23:10.



**Figure S4.** Same as Figure 3 but for sol 211 (Ls 102) from 19:25-20:25.

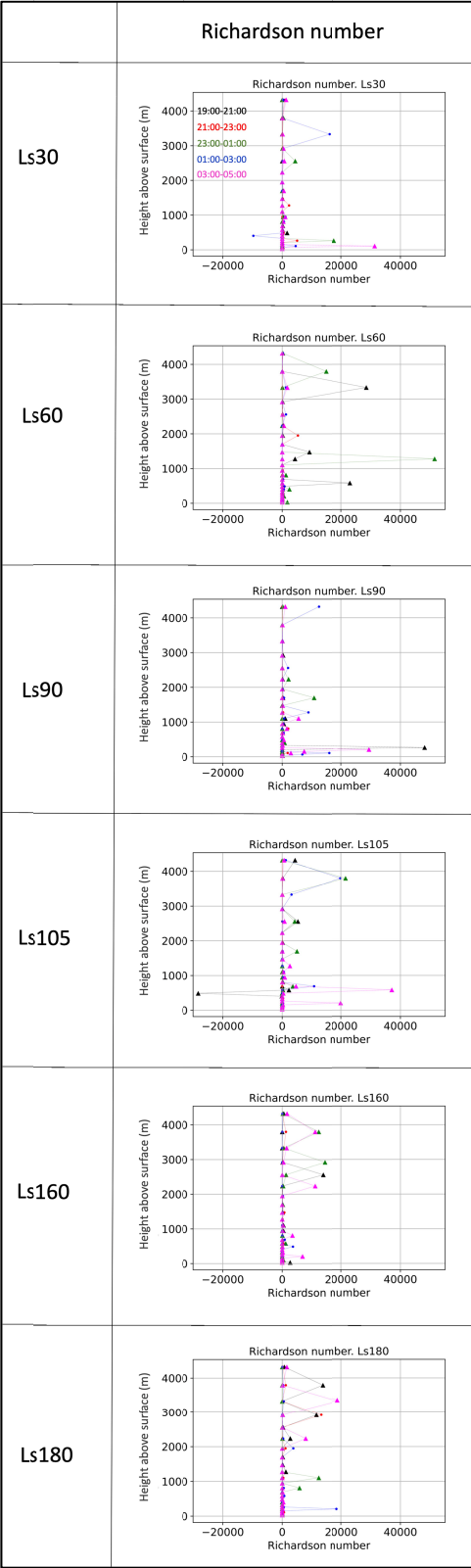


**Figure S5.** Same as Figure 3 but for sol 109 (Ls 56) from 23:05-00:05.



**Figure S6.** Same as Figure 3 but for sol 239 (Ls 116) from 23:30-00:30.





**Figure S7.** Same as Figure 14 but only for the whole range of Richardson number ( $Ri$ )