This document describes the contents of two supplementary data files for a paper published in Icarus ("Nighttime convection in water-ice clouds at high northern latitudes on Mars", by D. Hinson, H. Wang, J. Wilson, and A. Spiga; henceforth HWWS).

1) Characteristics of NMLs and temperature inversions in MY27

The file named "NML_properties_MY27.csv" contains a table of numbers (ascii text, comma separated values). There are 1084 rows and 26 columns. Each row describes a single radio occultation profile obtained from Mars Global Surveyor measurements in Mars year 27; there is an entry for each data point in Fig. 4 of HWWS. Elevations are referenced to the standard areoid.

Observing conditions:
column 1: Row number
column 2: Time of observation (UTC)
column 3: Mars Year
column 4: Ls (deg)
column 5: Local true solar time (Martian hours, 24 per solar day)
column 6: Angle between Sun and horizon (deg)
column 7: East longitude (deg)
column 8: Planetocentric latitude (deg)
column 9: Surface elevation (km); from 0.25° x 0.25° MOLA map

Properties of the NML (-99 if no NML is present):
column 10: Elevation at base (km)
column 11: Elevation at top (km)
column 12: Pressure at base (Pa)
column 13: Pressure at top (Pa)
column 14: Temperature at base (K)
column 15: Temperature at top (K)

Criterion used to identify an NML:
column 16: Minimum value of $d\theta/dz$ in RO profile (K/km)
column 17: Elevation of entry in column 16 (km)

Properties of the temperature inversion (-99 if no inversion is present):
column 18: Elevation at base (km)
column 19: Elevation at top (km)
column 20: Pressure at base (Pa)
column 21: Pressure at top (Pa)
column 22: Temperature at base (K)
column 23: Temperature at top (K)

Additional information:
column 24: Average vertical separation of samples in RO profile (km)
column 25: Orbit number
column 26: Name of RO profile, which can be found at the PDS Atmospheres Node (https://atmos.nmsu.edu/data_and_services/atmospheres_data/MARS/tp.html)

2) Animation of the annular water-ice cloud

The file named "Annular_Cloud_MY27.mp4" shows the diurnal evolution of water-ice clouds near the north pole of Mars in early summer (Ls = 118.6-121.0°) of Mars year 27. The bright feature at the center of each frame is the north residual polar cap (NRPC), composed of water ice. The images were acquired by the Mars Orbiter Camera (MOC) on NASA's Mars Global Surveyor spacecraft (Malin et al., 2010, doi:10.1555/mars.2010.0001). Image processing was performed by co-author Huiqun Wang. The animation was assembled from a 5-solar-day sequence of images acquired by the MOC wide-angle blue camera, which is more sensitive to clouds than the red camera. The local time at low latitudes on the long end of each image swath is early afternoon (~14 h); successive frames move westward with the Sun. The annular cloud appears to the left of the NRPC. The spatial structure of the cloud follows a regular diurnal cycle, dissipating during the day and forming again the following night. The cloud is more symmetrical and better organized at night (near the terminator), when it resembles an extratropical cyclone. The animation includes the images shown in Figs. 8 and 9 of HWWS.