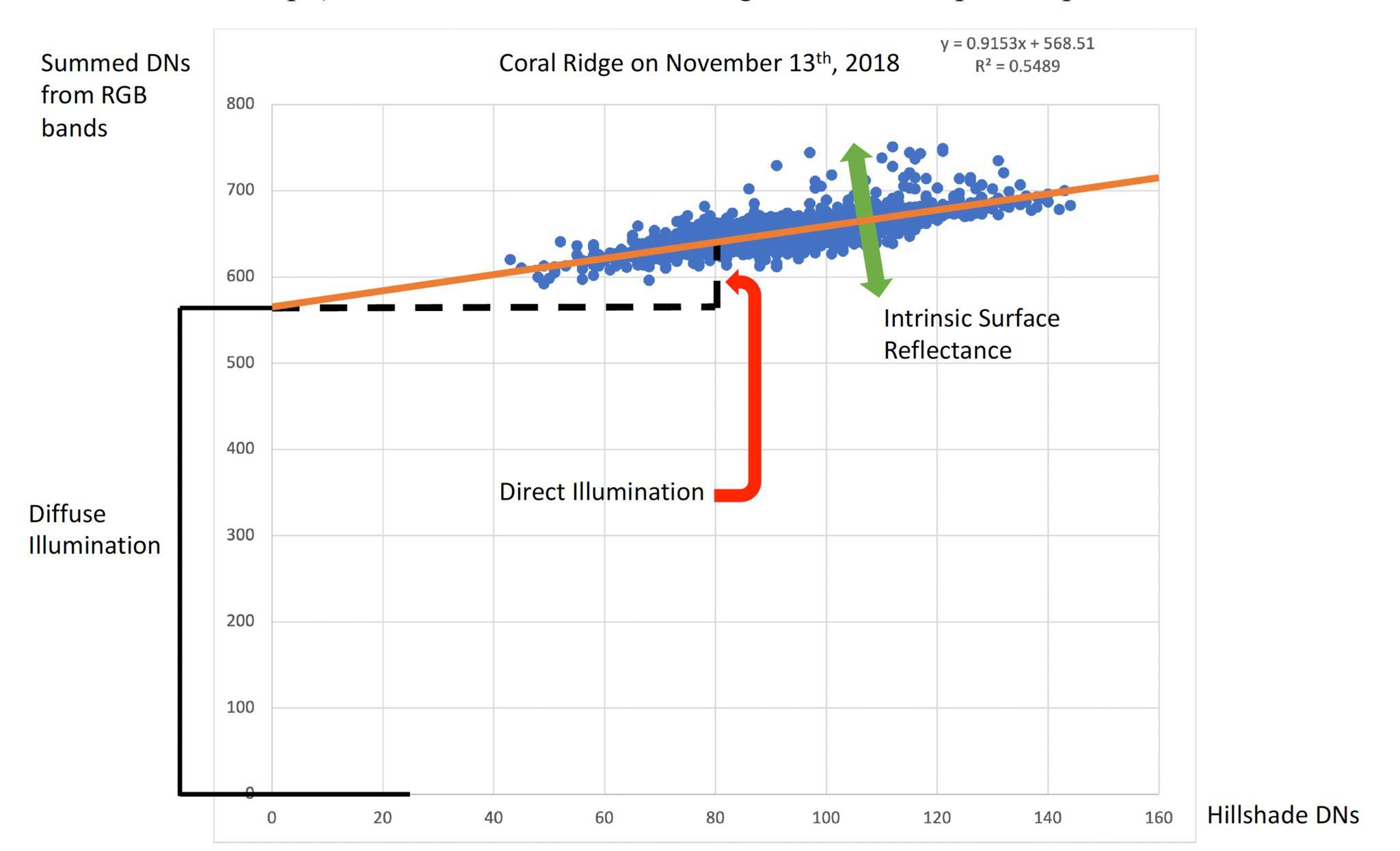
Supplementary Materials for

**Timing and duration of ephemeral Antarctic water tracks and wetlands using high temporal-resolution satellite imagery, high spatial-resolution satellite imagery, and ground-based sensors in the McMurdo Dry Valleys**

Table SuppA. Water track activity by year determined using WV and Planet data. Table SuppA provides a full list of image data used in this study as well as an inventory of image counts by site, year, and sensor.

Supporting Files:

WT\_planet.zip contains animated gif images showing the full seasonal darkening history at CR, GGB, NB, WHC, WT1, and SF. Animations are composed of terrain-corrected Planet images.



**Fig. SuppA.** Terrain correction example from Coral Ridge. Training data is extracted from sites within the Planetscope image that have a wide range of surface azimuths and slopes, producing a wide range of hillshade DN values. A linear model is fit between the hillshade DN and the summed DN. The y-intercept of this model is the satellite image DN resulting from only diffuse illumination. The slope of the line is the contribution of direct illumination on rough terrain to the satellite image DN values. Deviation from this line indicates differences in surface albedo resulting from differences in lithology, wetting, grain size, etc. Subtracting this linear model from the summed RGB or panchromatic data results in an image for which DN is independent of hillshade value (i.e., a flat, horizontal line), meaning only differences in surface reflectivity drive dark/light values.



**Fig. SuppB.** Flow chart showing remote sensing processing steps used in this study for terrain correction of Planet image data. Planet RGB images are summed to produce a panchromatic summed reflectance product. Training polygons are manually mapped onto the image in areas without water tracks or snow. DN values from the summed RGB product and the time-of-collection hillshade are sampled within the training polygons, and a linear best fit is found between summed RGB and time of collection hillshade value. The terrain corrected image is produced by subtracting the DNs predicted by the hillshade and the best-fit linear model from the summed RGB image.