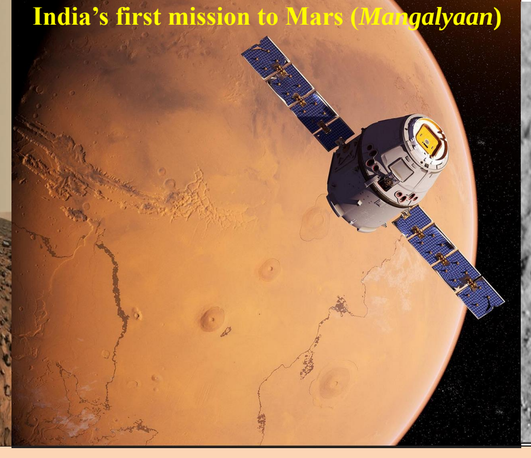
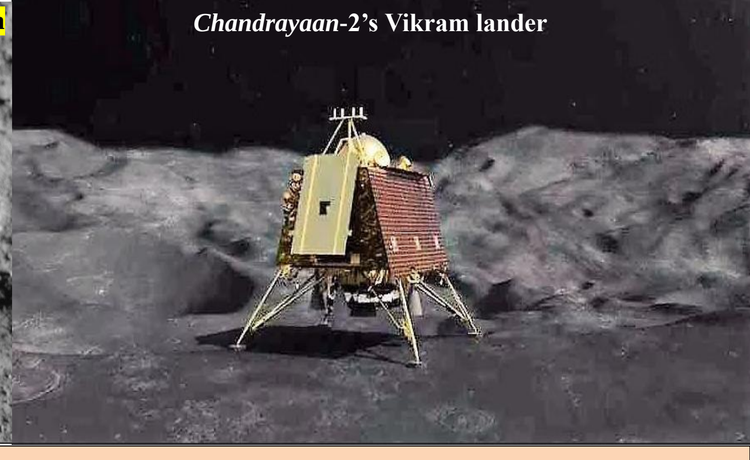




Planetary Remote Sensing Studies of Mars and Moon
Department of Remote Sensing

Seasonal thermal inertia variations at Gale Crater, Mars: Role of active surface deposition phenomena

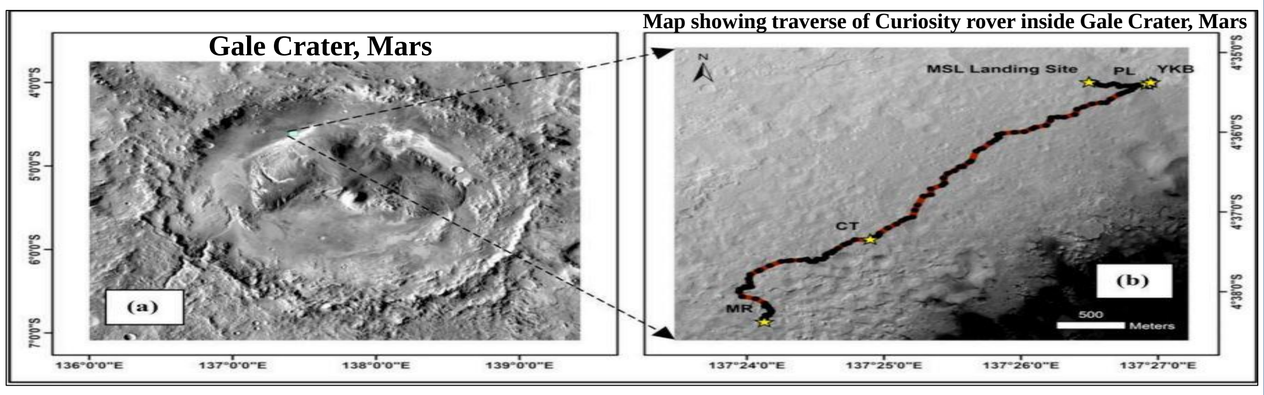


Fig. 1 (a) Gale Crater, Mars (b) Curiosity traverse map showing four locations within Gale Crater – Point Lake (PL), John Klein - Yellowknife Bay (YKB), Cooperstown (CT) and Mt. Remarkable (MR)

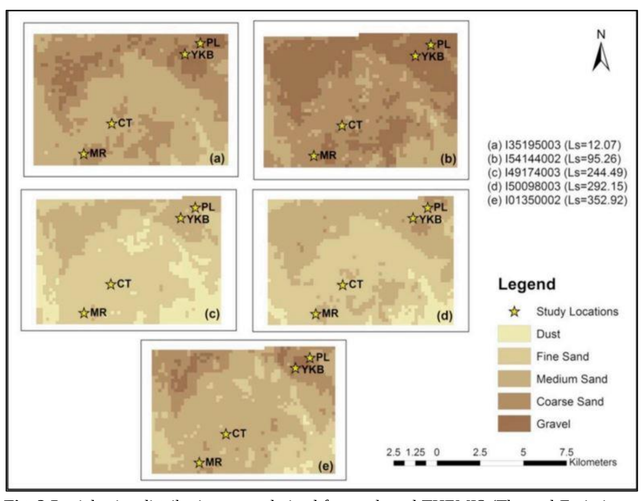


Fig. 2 Particle size distribution maps derived from selected THEMIS (Thermal Emission Imaging System) thermal inertia (TI) images

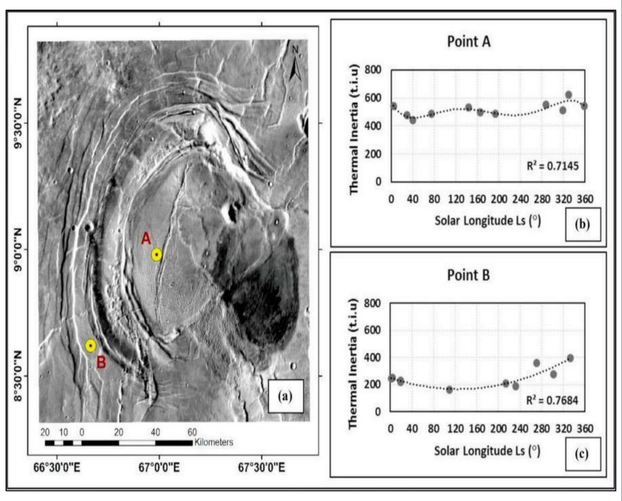


Fig. 3 (a) THEMIS Day Time IR mosaic of the Nili Patera caldera (b) Seasonal TI variation at point A and point C

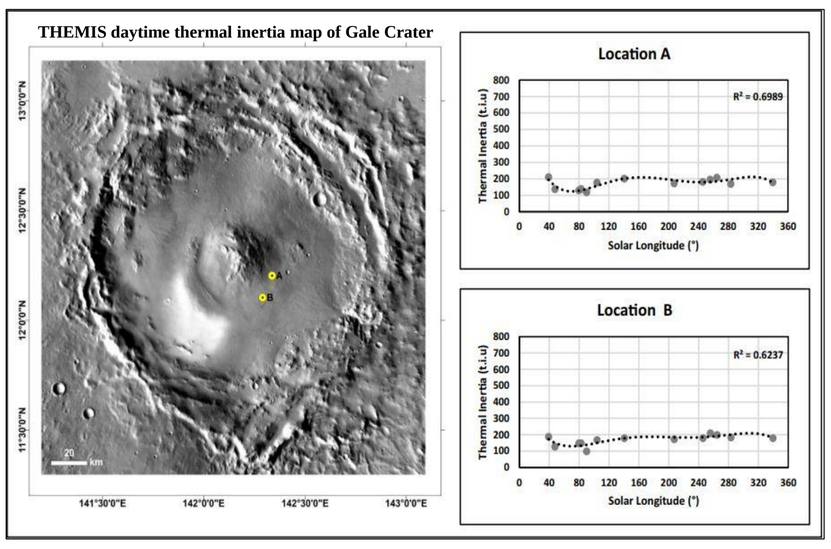


Fig. 4 (a) THEMIS Day Time IR mosaic of Eddie crater (b) Seasonal TI variation at location A (c) Seasonal TI variation at location B.

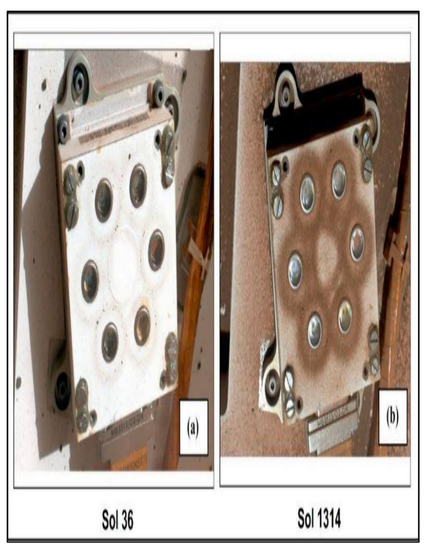
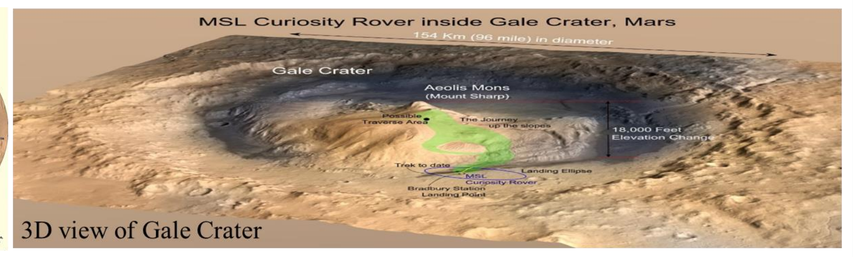
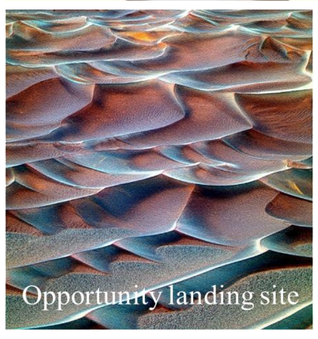


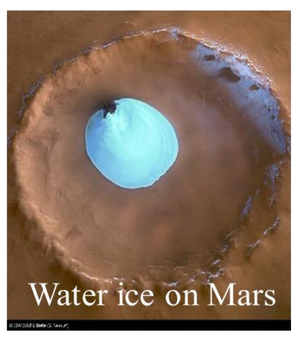
Fig. 5 Martian dust deposited on a sensor on (a) Sol 36 (b) Sol 1314

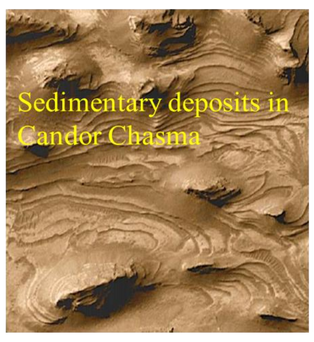
Rangarajan & Ghosh (2020)

A tour of Mars through different orbiter images









Automatic detection of yardangs and dunes on Gale Crater, Mars

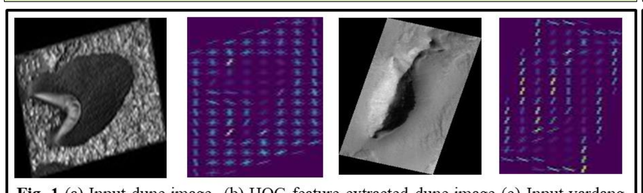


Fig. 1 (a) Input dune image (b) HOG feature extracted dune image (c) Input yardang image (d) HOG feature extracted yardang image

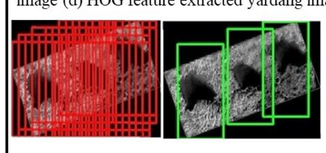


Fig. 2 (a) Dunes with multiple bounding boxes (b) Dune with final bounding boxes

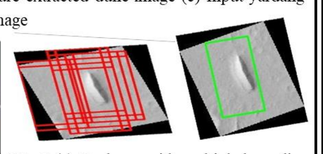


Fig. 3 (a) Yardangs with multiple bounding boxes (b) Yardangs with final bounding boxes

Scariah et. al. (2021)

Seasonal variation of surface temperature over Gale Crater, Mars

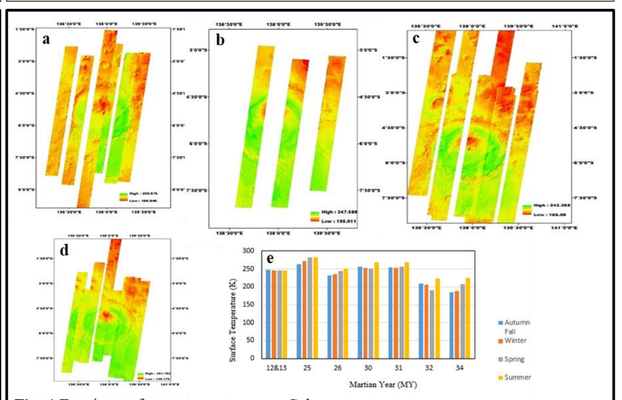


Fig. 4 Evening surface temperature over Gale crater at MY32

Shaheen et. al. (2019)

Retrieval of Atmospheric Optical Depth (AOD) over Gusev Crater, Mars

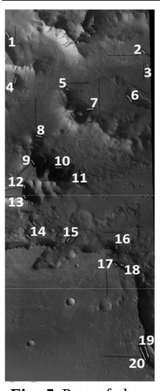


Fig. 5 Part of the HRSC nadir image in Valles Marineris.

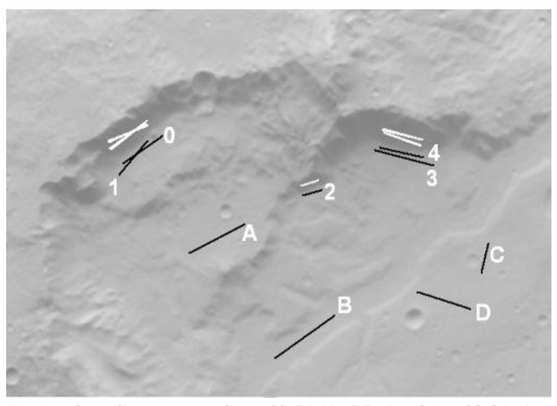
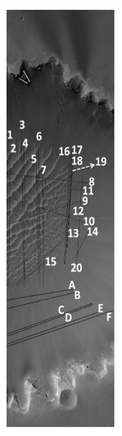


Fig. 6 In the nadir image, A and B yielded 0.38 while C and D yielded 0.40, with an average of 0.39 ± 0.03. Correction factor C = 0.54 and 0.71, respectively.



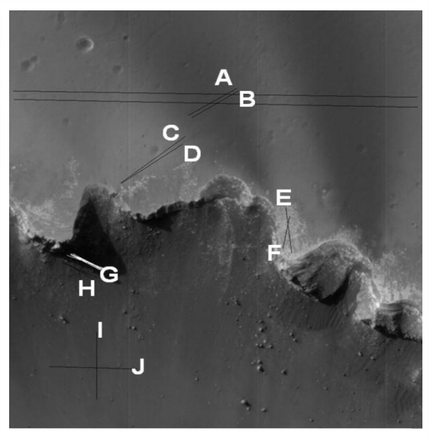


Fig. 7 Victoria Crater, Mars, in a HiRISE red image.

Shaheen et. al. (2019)

Photometric correction of *Chandrayaan*-1 Hyper-Spectral Imager (HySI) images *for the first time*

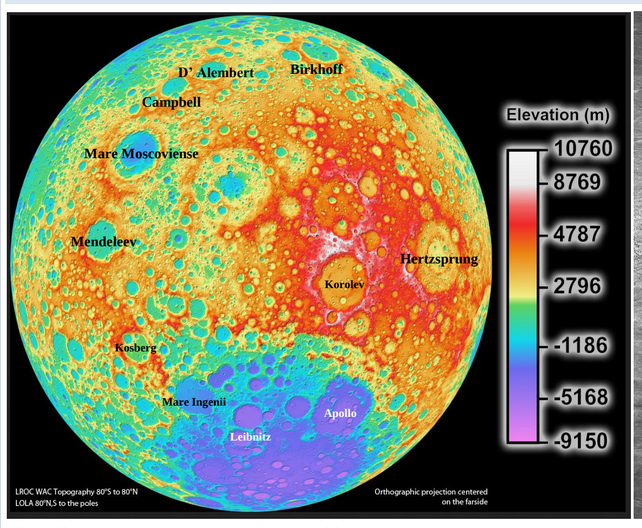


Fig. 1 Hemispherical topographic map of the Moon

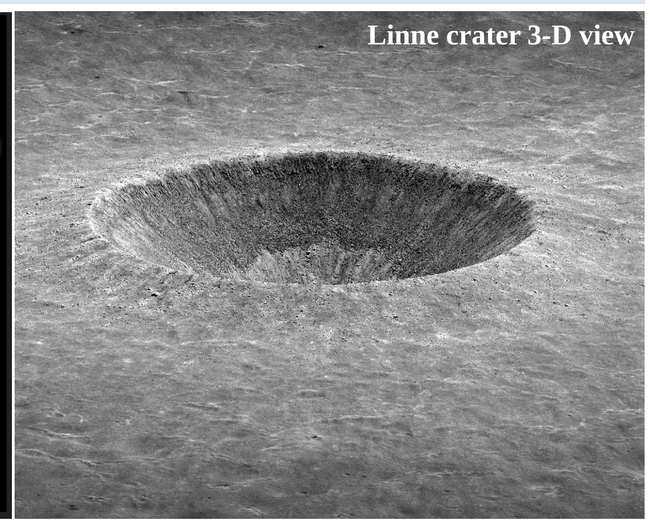


Fig. 2 3-D view of Linne Crater, Moon

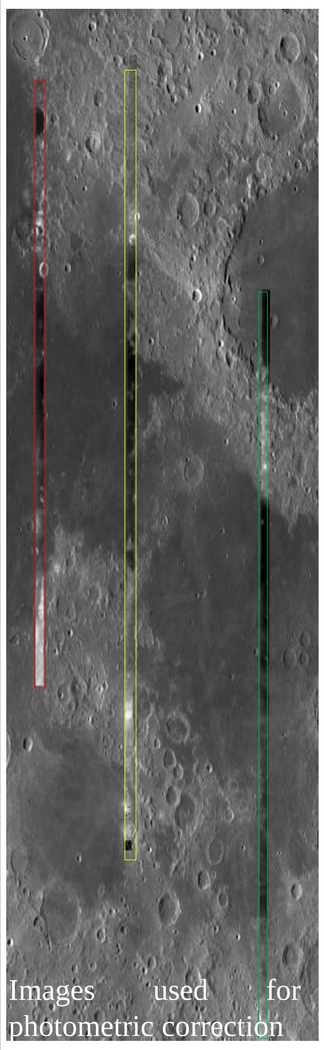


Fig. 3 The three images chosen for this study

Bose et. al. (2022)

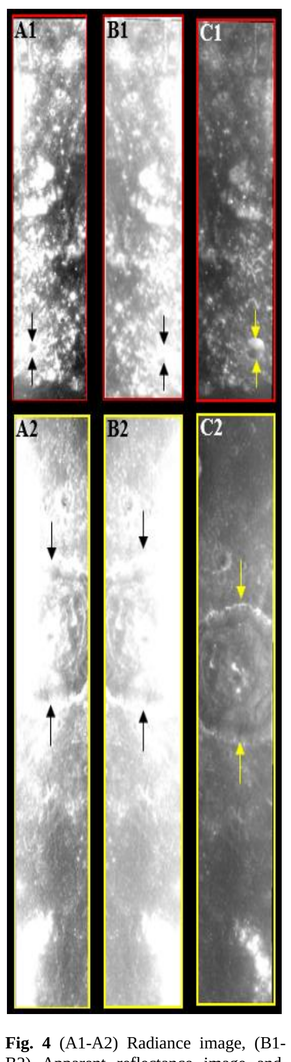


Fig. 4 (A1-A2) Radiance image, (B1-B2) Apparent reflectance image and, (C1-C2) Photometrically corrected reflectance image

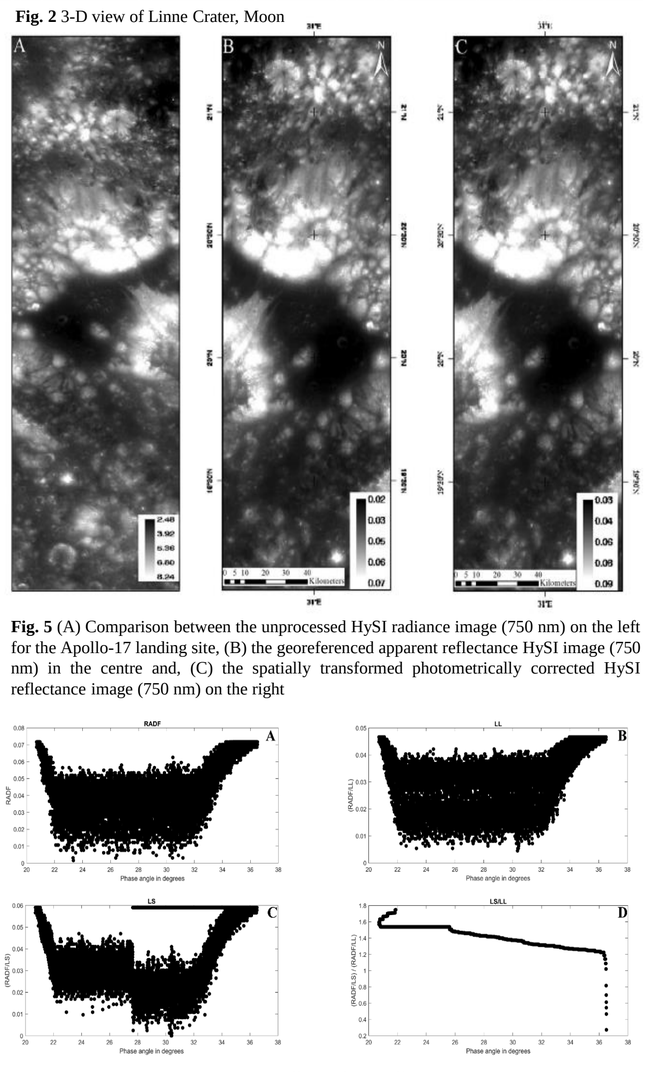


Fig. 5 (A) Comparison between the unprocessed HySI radiance image (750 nm) on the left for the Apollo-17 landing site, (B) the georeferenced apparent reflectance HySI image (750 nm) in the centre and, (C) the spatially transformed photometrically corrected HySI reflectance image (750 nm) on the right

Fig. 6 Comparative plots depicting the effects of two different limb darkening functions on HySI data at 750 nm. (A) is RADF, (B) the ratio of RADF and Lunar-Lambert (RADF/LL), (C) the ratio of RADF and Lommel-Seeliger (RADF/LS) and, (D) the ratio of two functions, LL and LS

Boulder falls detected on the Moon using LRO-NAC images

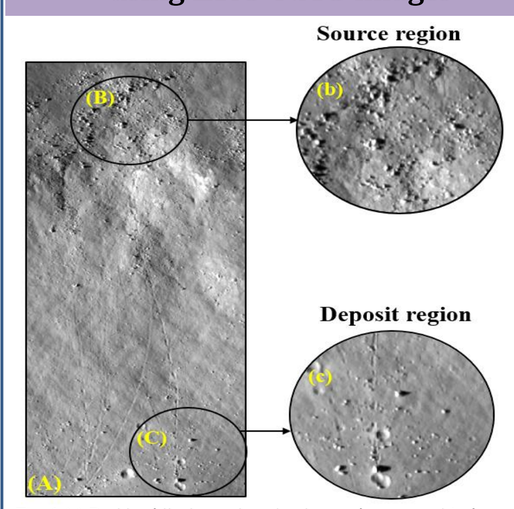


Fig. 1 (a) Boulder falls detected on the slopes of a topographic feature on the Moon. (b) shows the eroded material in the source region while (c) shows boulders getting deposited downslope

Anomalous temperature variations found in the lunar south pole using LRO-Diviner data

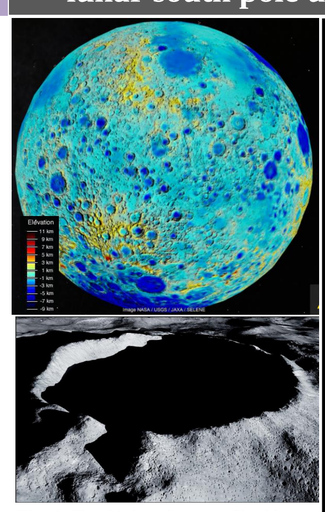


Fig. 1 The 21 km diameter Shackleton Crater is permanently shrouded in darkness in the lunar South Pole

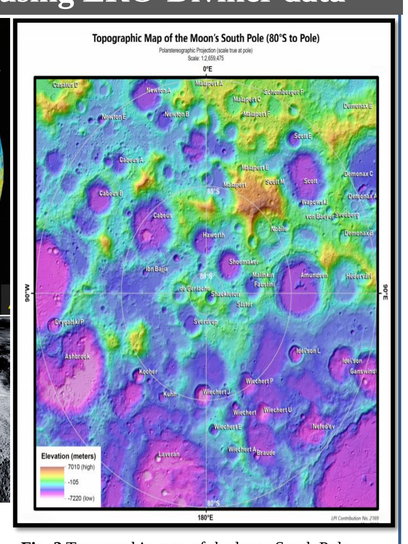


Fig. 2 Topographic map of the lunar South Pole

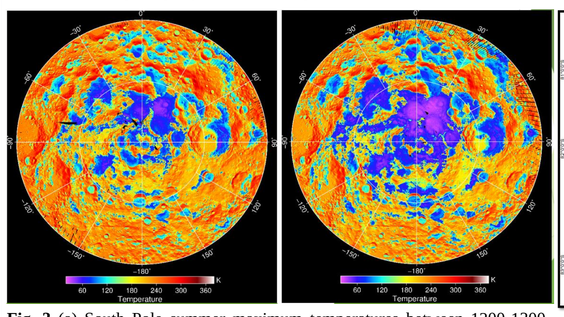


Fig. 3 (a) South Pole summer maximum temperatures between 1200-1300 hours, (b) South Pole winter maximum temperatures between 1200-1300 hours

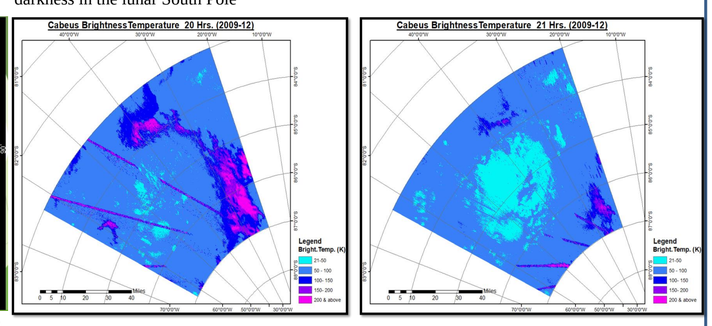


Fig. 4 Summer nighttime temperatures of Cabeus crater at (a) 2000 and (b) 2100 hours local time

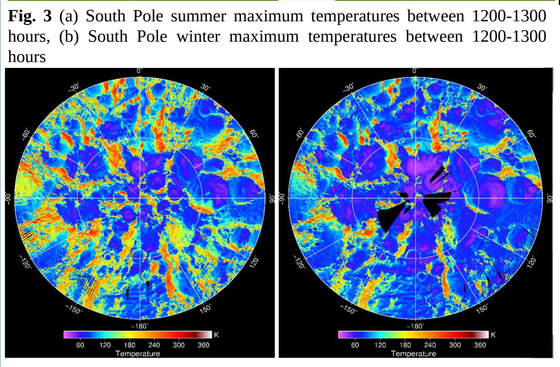


Fig. 5 (a) South Pole summer temperature map at 1800 hours for latitudes between 80° S to 90° S (b) South Pole winter temperature map for latitudes between 80° S to 90° S

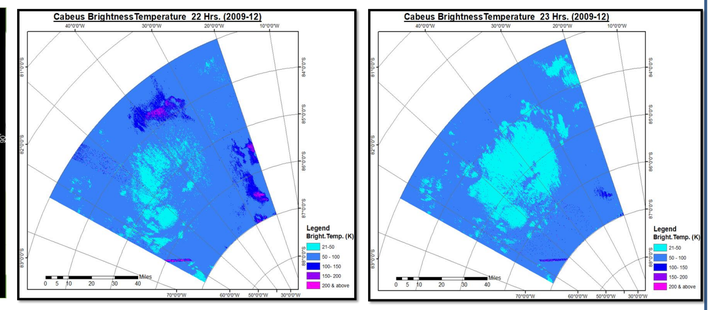


Fig. 6 Summer nighttime temperatures of Cabeus crater at (a) 2200 and (b) 2300 hours local time

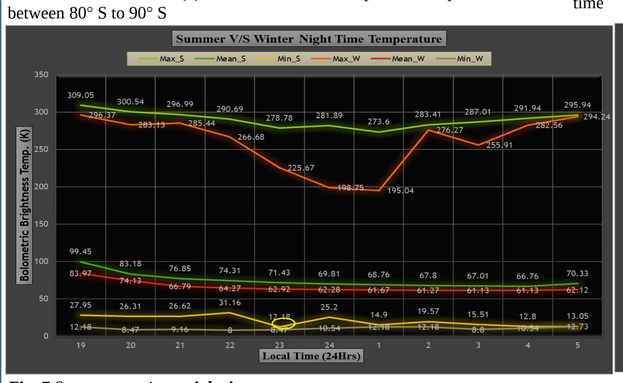


Fig. 7 Summer vs winter **nighttime** temperatures

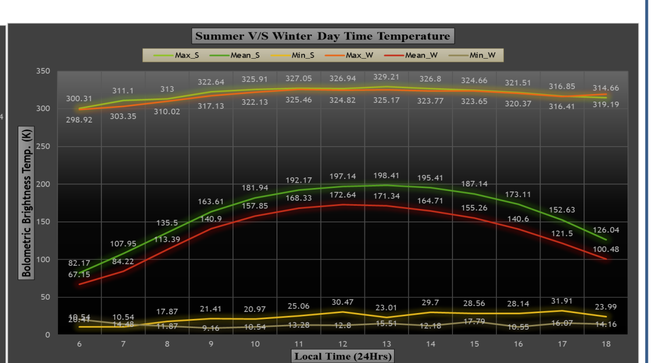


Fig. 8 Summer vs winter **daytime** temperatures

Suman et. al. (2022)