Henson Crater

Lunar South Polar Region

Geologic introduction to the impact site

The 43 km diameter Henson crater is one of the oldest impact craters in the south polar region. It is appropriate that one of the first craters formed in the region be named after one of the Earth's first polar explorers.

Henson crater formed during a period of severe bombardment of the Earth-Moon system by asteroids and comets. The craters is so old that its exact age is uncertain. It was formed before the 33 km diameter Sverdrup crater with an estimated age of 3.8 ± 0.1 billion years and the 33 km diameter de Gerlache crater with an estimated age of 3.9 ± 0.1 billion years. Both those craters cross-cut the edges of Henson crater.

The crater excavated rock from the Moon's primordial crust and ejected that material throughout the region and likely blanketed the south pole.

The crater contains a permanently shadowed region (PSR) that may harbor ices that can be used to study the evolution of volatiles in the inner Solar System and for sustainable exploration of the Moon. Model calculations suggest water ice (H_2O) exists on the floor of the crater. Water ice at the surface has been detected in several locations from orbit. The floor of the crater is so cold that portions of it may also be covered with dry ice (CO_2). A recent study identified several sites within the crater that are accessible with a rover.

Henson crater is located within the Artemis exploration zone.

The location of the crater is illustrated in five images:

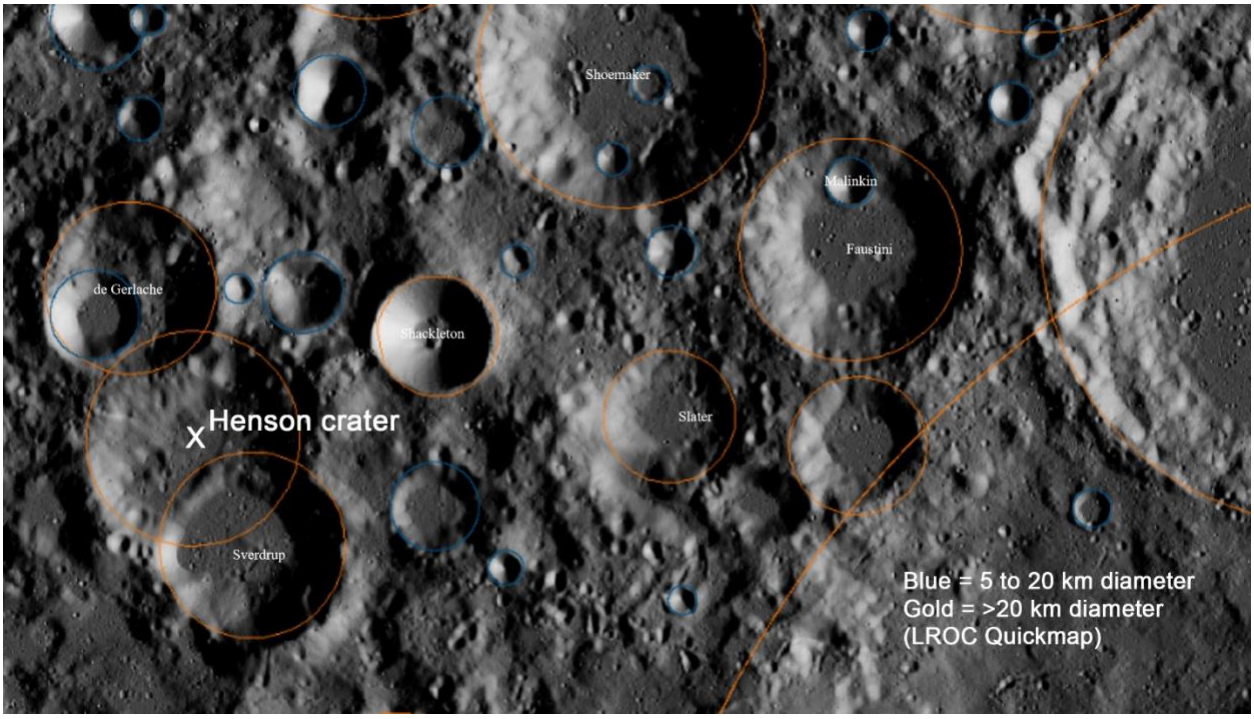
1. Filename Henson Crater_Approved Location.jpg
2. Filename Henson Crater_HillShadeImage.jpg
3. Henson Crater – Lunar South Pole.jpg
4. Lunar South Pole Topography_85-90_wHensonLabel.pdf
5. Lunar South Pole Topography_88-90_wHensonLabel.pdf

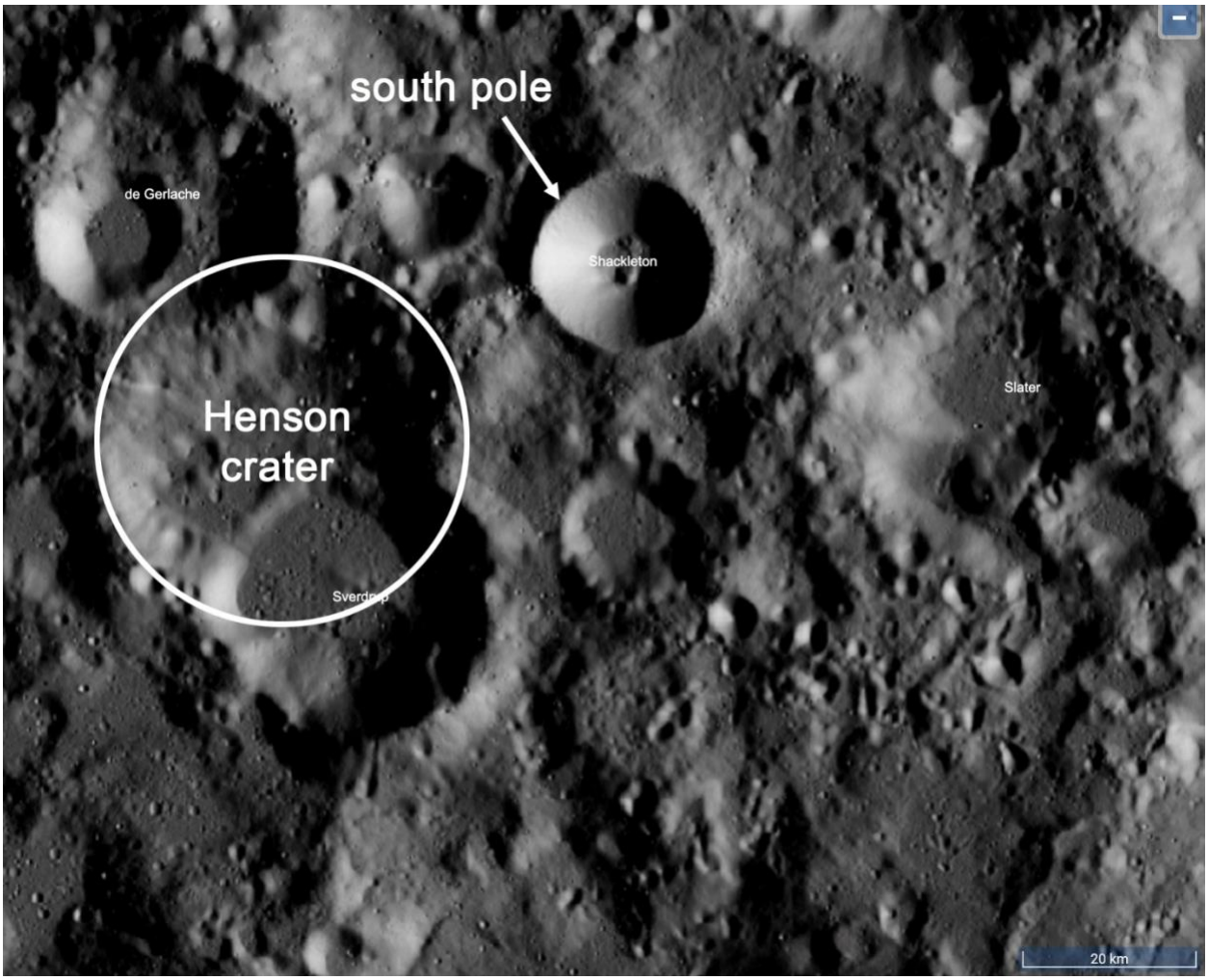
The images appear at the end of this document.

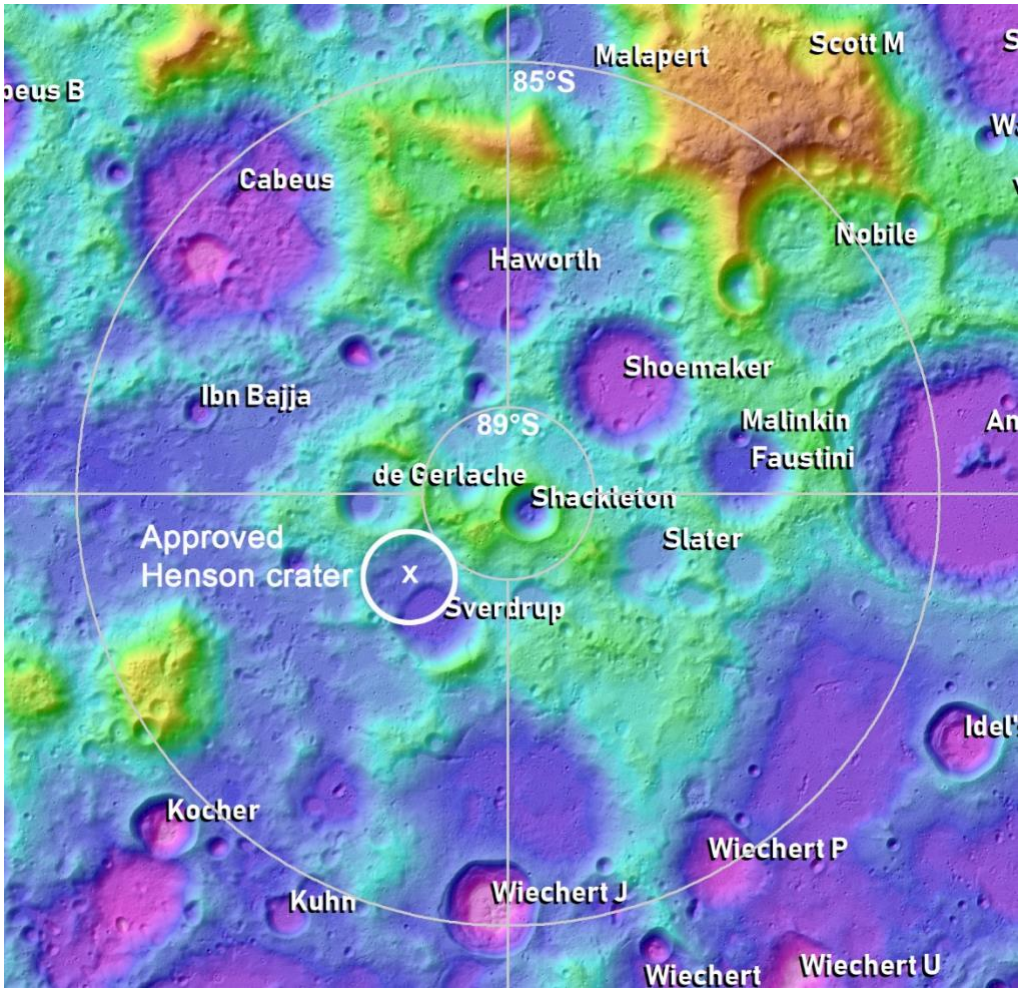
Technical details approved by the IAU Task Group for Lunar Nomenclature

Feature Name	Henson
Clean Name	Henson
Feature ID	16004
Target	Moon
Feature Type	Crater, craters
Coordinate System	Planetographic, +East, -180 - 180
Control Network	LOLA 2011
Northernmost Latitude	-87.9 °
Southernmost Latitude	-89.24 °
Easternmost Longitude	-105.25 °
Westernmost Longitude	-156 °
Diameter	43 km
Center Latitude	-88.57 °
Center Longitude	-130.63 °
kml download	Henson.kml
Continent	North America
Ethnic/Cultural Group or Country	United States
Quad	-
Reference	[624] - A Journey for the Ages: Matthew Henson and Robert Peary's Historic North Pole Expedition, by Matthew Henson: Skyhorse Publishing, New York, 2016.
Approval Status	Adopted by IAU
Approval Date	Sep 1, 2021
Origin	Matthew; American polar explorer (1866-1955).
Last Updated	Sep 1, 2021 5:17:16 PM

Five Images of Henson Crater

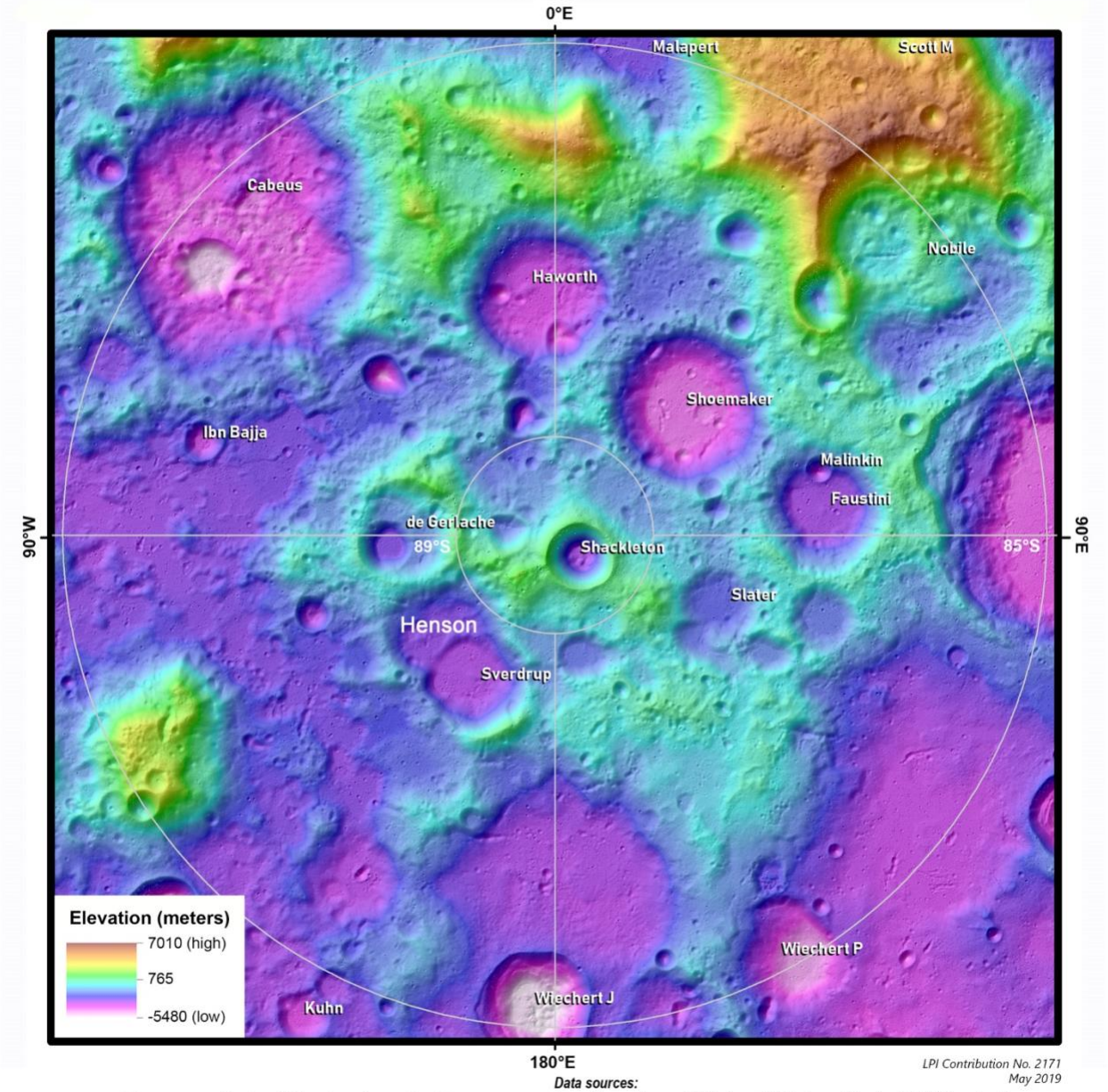



south pole
de Gerlache
Shackleton
Slater
Henson
crater
20 km


Malapert
Scott M
85°S
Cabeus
Nobile
Haworth
Shoemaker
Ibn Bajja
89°S
Malinkin
Faustini
de Gerlache
Shackleton
Approved
Henson crater
x
Slater
Sverdrup
Kocher
Wiechert P
Kuhn
Wiechert J
Wiechert
Wiechert U

Topographic Map of the Moon's South Pole (85°S to Pole)

Polarstereographic Projection (scale true at pole)
Scale: 1:1,343,325



LPI Contribution No. 2171
May 2019

Data sources:
Lunar Reconnaissance Orbiter Lunar Orbiter Laser Altimeter (LOLA) 20-m elevation product [NASA Goddard Space Flight Center] over derived hillshade with solar azimuth 45°W and solar elevation 45°

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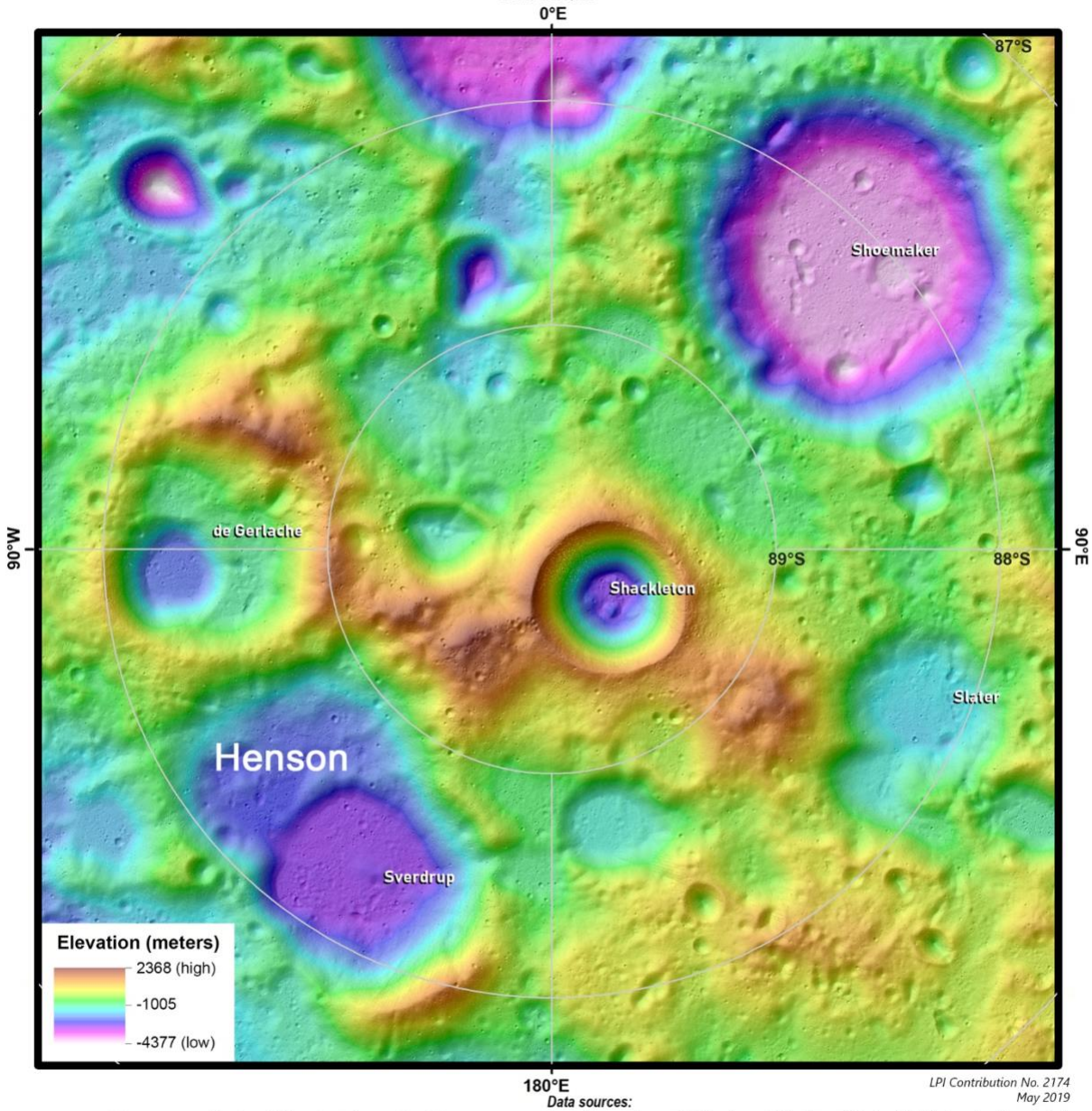
Houston, Texas, USA

Topographic Map of the Moon's South Pole

Polarstereographic Projection (scale true at pole)
Scale: 1:600,000



LPI Contribution No. 2174
May 2019

Data sources:
Lunar Reconnaissance Orbiter, Lunar Orbiter Laser Altimeter (LOLA), 5-m elevation product [NASA Goddard Space Flight Center] over derived hillshade with solar azimuth 45°W and solar elevation 45°

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