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A composite band of facial features within a winding valley of Libya Montes on the planet Mars

Abstract

This is an analysis of a horizontal band of facial features located along the south facing side of a winding valley within the Libya Montes region of Mars observed in NASA images provided by the Mars Global Surveyor and the Mars Reconnaissance Orbiter (MRO) spacecraft. The images reveal a composite set of three fused portraits that exhibit the contours and defining aspects of three human and humanoid faces. Anatomical measurements of the three faces include individual eyes, nose, mouth, and chin features. When taken together these facial components induce the visual impression of sliced and conjoined faces exhibiting a unique set of proportional facial features. The claim of intelligent design is offered and a geologist and geoscientist examine natural mechanisms that could contribute to the formation of these features. A terrestrial comparison of aesthetic and iconographic motifs is investigated. Further study and a request for additional images of these facial components are also encouraged.

Keywords

Mars: Libya Montes, Crown face, geoglyph, Artifacts, MGS, MRO.

INTRODUCTION

Between 1976 and 1980 the Viking I and Viking II orbiters obtained images and data of the Martian surface that covered the entire planet[1]. One anomalous mesa in the Cydonia region that projected the form of a humanoid head caught the attention of NASA scientists. Known as the famous Face on Mars the facial features appear on a large, rectangular mesa approximately 2.5 kilometers long (Figure 1, left). Beyond NASA's initial claim that the facial features were natural and the results of "a trick of light and shadow," some independent researchers suspected the formation to be artificial. Richard Hoagland maintained that the face was not human, but was a bifurcated mask with a humanoid visage on the western side and a feline visage on the eastern side[2]. With the release of higher resolution pictures of the formation, provided by the NASA's Mars Global Surveyor in 1998 (Figure 1, center) and 2001 (Figure 1, right), a former orbital imaging specialist for the U.S Naval Observatory, Dr. Tom Van Flandern[8] and an Electrical Engineer with an expertise in digital imaging Dr. Mark Carlotto[4] concluded that facial features may indeed be artificial.

In 2001 another facial formation was discovered in Mars Global Surveyor (MGS) narrow-angle image M03-

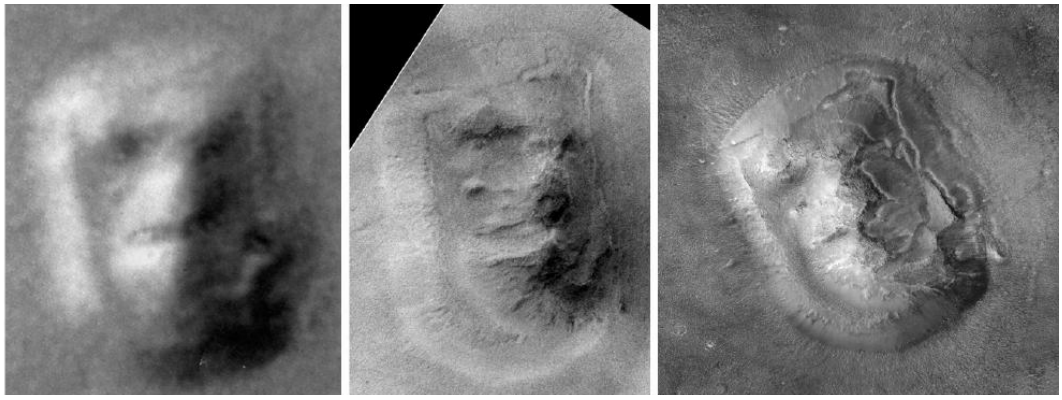

Figure 1 : The Face on Mars (Cydonia), Left: Viking - 70A13 (1976). Image courtesy NASA/JPL/Cydonia Institute, Center: Mars global surveyor - SP 220003 (1998), Image courtesy NASA/JPL/Cydonia Institute, Right: Mars global surveyor - E03-00824 (2001), Image courtesy NASA/JPL/cydonia institute

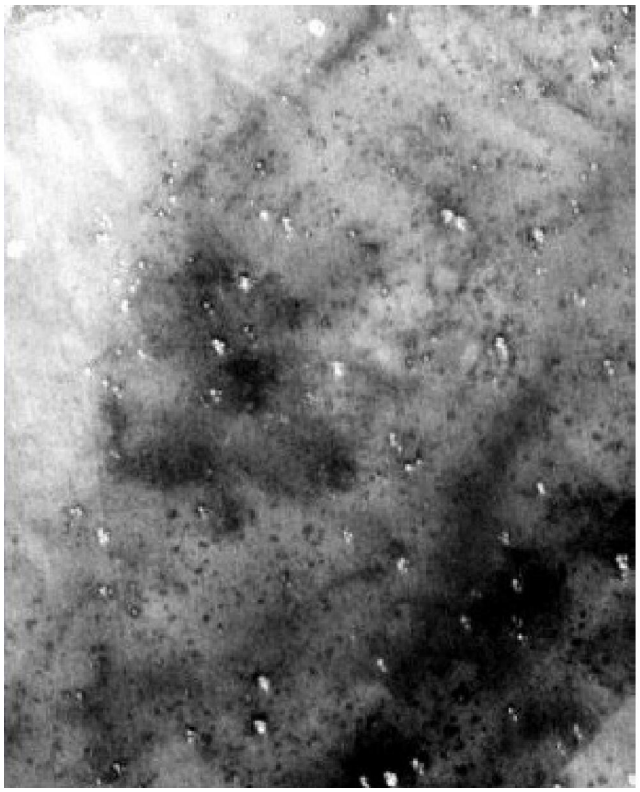

Figure 2 : The profiled face, MOC image M03-05549 (2001), Image courtesy NASA/JPL/The cydonia institute

05549 by a member of the Society for Planetary SETI Research (SPSR) John P. Levasseur. Located within the Syria Planum region of Mars the formation features the profiled portrait of a human head wearing a cylindrical headdress[5] (Figure 2). The features include an eye, nose, mouth, and hair. Addition images provided by the Mars Reconnaissance Orbiter (MRO) HiRISE camera in 2010 confirmed the formation and its features[6].

On July 9, 2000 independent researcher Greg Orme discovered a band of facial features in a section of MGS narrow-angle image M02-03051 that he originally referred to as the King Face (Figure 3). Soon after the its discovery, founding member of the Meta Research

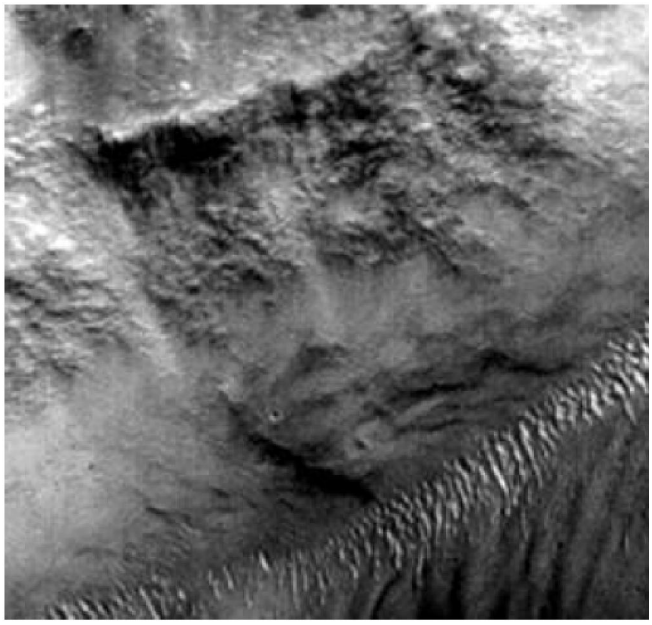

Figure 3 : The crowned face (AKA The King Face), Inverted and cropped portion of MOC image M02-03051 (2000), Image courtesy NASA/JPL/Orme

group, Tom Van Flandern renamed it the Crowned Face[7] and organized a press conference at the National Press Club in New York on May 8th 2001 and presented various examples of anomalous formations observed on Mars including the Crowned Face (Figure 3) Speaking on the Crowned Face, Van Flandern commented: "While not near the Cydonia area, this face portrayal is again striking for the richness of its detail, far better than the typical face arising in clouds or geological formations on Earth. The latter tend to be distorted and grotesque when they are more than simply impressionistic."[8] Due to the exposure of the press conference the images of the Crowned Face appeared in the New York Post and on Good Morning America and FOX News. In addition newspapers and online news sources, TV stations located in Canada and Europe also mentioned Orme's discovery[9].

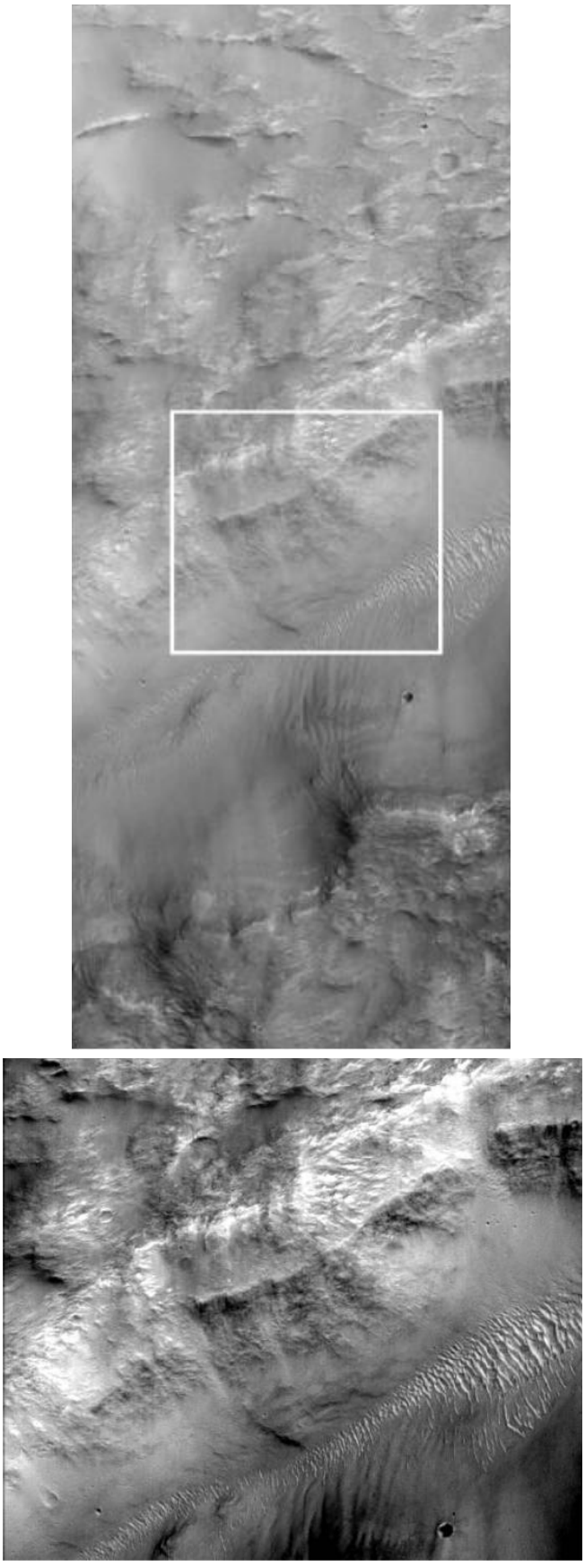

Figure 4 : Left: portion of MOC image M02-03051 (2000). Inverted and notated with the location of the composite band of facial features, Right: detail, Image courtesy NASA/JPL/Cydonia institute

THE COMPOSITE BAND OF FACIAL FEATURES

MGS MOC images of the facial features

The original image for this study was obtained via the Malin Space Science Systems (MSSS) website. The Mars Global Surveyor narrow-angle image M02-03051 was acquired on June 22, 1999 and released to the public on May 22, 2000[10]. The area examined is in the Libya Montes region of Mars located between 1.94° to 3.39° North and 275.45° to 275.59° West[11].

The composite band of facial features is located approximately in the center of the swath between a large mound in the north and a channel running across the area from east to west. The formation is approximately 876 meters long from the top of the craggy ridge line to the base of the valley (Figure 4). Due to the extreme length of the source image M02-03051, the strip presented in Figure 3 was inverted and cropped at the top and bottom of the image. The composite band of facial features highlighted within a boxed section of the image. The area of interest is a structural pattern expressed in the topography along the valley wall that suggests a band of gigantic facial features that Orme referred to as the King Face or Crown Face (Figure 4).

In examining the surface patterns observed within the valley wall we noted that the facial formations form a set of sliced portraits of recognizable facial features in the appropriate size, shape, and anatomical orientation of companion features that include an eye, eye brow, nose, nostril, mouth and chin.

Two mars reconnaissance orbiter images of the facial features

In 2005 the Mars Reconnaissance Orbiter (MRO) spacecraft launched from Cape Canaveral in route to Mars with the High Resolution Imaging Science Experiment (HiRISE) camera on board. Utilizing the public targeting request form provided on the Arizona University Mars Reconnaissance Orbiter (MRO) HiRISE website independent researcher Greg Orme requested additional images of the Libya Montes region of Mars, showing the composite band of facial features under different conditions[12]. In 2010 the MRO HiRISE CTX camera captured two images of the composite band of facial features (Figure 5 and Figure 6).

Both images have been inverted and cropped at the top and bottom of the strip. Due to the direct sun exposure to the valley wall, in the early morning hours, both images were enhanced with minor contrast adjustments to the original presentation. The two MRO

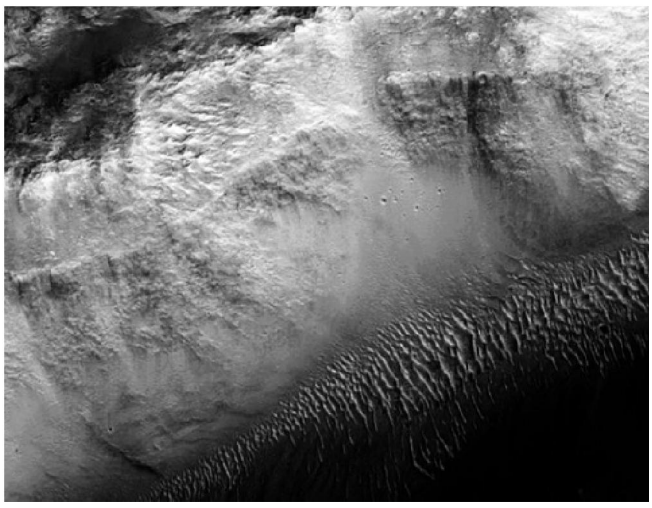

Figure 5 : Detail of facial features

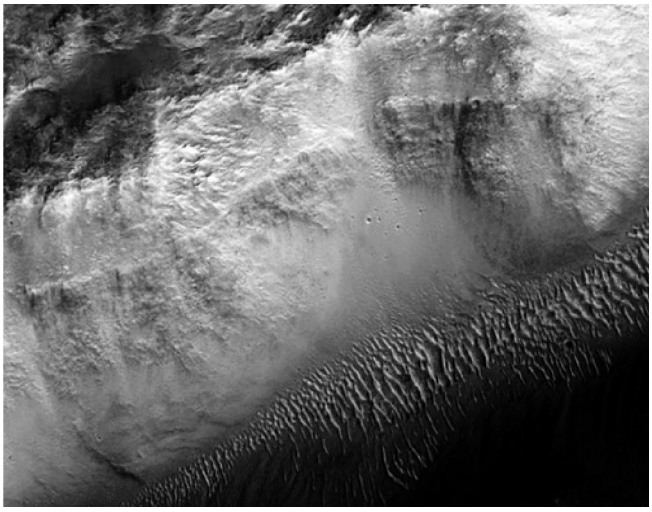

Figure 6 : Detail of facial features, MRO HiRISE ESP_018368_1830 (2010), Image courtesy arizona university/ cydonia institute, Enhancement by the cydonia institute

HiRISE images were acquired via the public targeting program. Greg Orme submitted two requests for the HiRISE camera to image the area on March 12, 2010. The first MRO image ESP_018223_1830 was targeted on June 16, 2010 and released to the public on August 2, 2010[13] (Figure 5). The second MRO image ESP_018368_1830 was targeted on June 27, 2010 and released to the public on August 2, 2010[14] (Figure 6). MOC HiRISE ESP_018223_1830 (2010). Image courtesy Arizona University/Cydonia Institute. Enhancement by the Cydonia Institute

MOC & MRO ancillary data – sun and camera angles

There are considerable differences in the time frame, telemetry, sun angle, resolution and other factors of the three images; a comparison chart is presented as Table 1. The basic facial features persist throughout the three images, and some features that were obscured in the first MGS image are now visible in the second and third HiRISE images. The first photograph of the formation MOC image M02-03051 was taken in 1999 during the summer in mid-afternoon (3:53 PM) from an emission or camera angle of 0.21degrees off nadir at an altitude of 384.58 km (238.967 miles). The MOC image has a resolution of 5.78 meters per pixel. The second photograph MRO HiRISE image ESP_018223_1830 was acquired eleven years later in 2010 during summer at mid-afternoon (3:23 PM) from an emission or camera angle of 7.1 degrees off nadir at an altitude of 272.2 km (170.2 miles). The image has a resolution of 54.5 centimeters per pixel. The third photograph MRO HiRISE image ESP_018368_1830 was acquired in the summer of 2010 during mid-afternoon (3:19 PM) from an emission or camera angle of 10.3 degrees off nadir at an altitude of 274.7 km (171.7 miles). The image has a resolution of 55.0 centimeters per pixel. In both MRO HiRISE images the sun light

TABLE 1 : Comparative ancillary data for MOC image M02-03051 and MRO HiRISE images ESP_018223_1830 and ESP_018368_1830

Image Number	M02-03051	ESP_018223_1830	ESP_018368_1830
Image Start Time SCET	1999-06-22T 01:15:53.73	2010-6-16T 03.23	2010-6-27T 03:19
Emission Angle	0.21°	7.1°	10.3°
Incidence Angle	39.42°	53°	52°
Phase Angle	39.35°	47.8°	61.0°
Pixel Width	5.78 m	54.5 cm	55.0 cm
Center Longitude	275.52°W	84.7°	84.7°
Center Latitude	275.52°W	2.7° N	2.7° N
Spacecraft Altitude	384.58 km	272.2 km	274.7 km
North Azimuth	93.10°	96°	97°
Sun Azimuth	14.12°	34.7°	34.6°
Solar Longitude	158.31°	105.3°	110.4°
Local True Solar Time	2:60PM	3:19PM	3:23PM
Release Date	5/22/2000	8/2/2010	8/2/2010

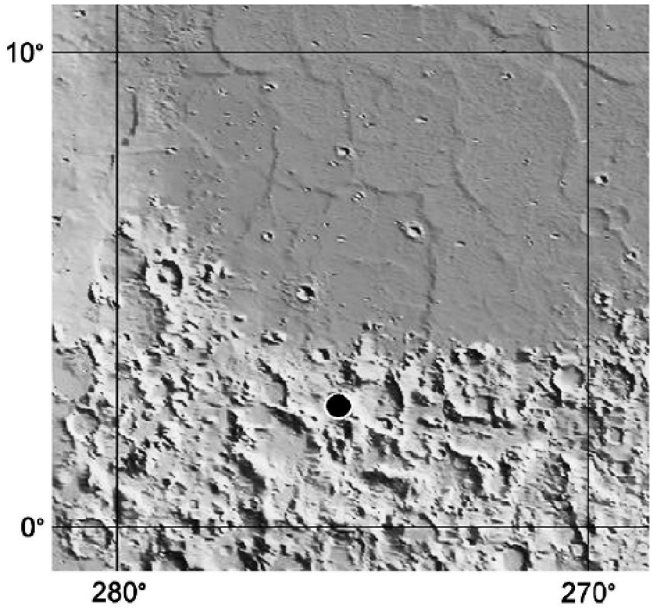

Figure 7 : Libya Montes, Mola data map notated with the approximant location of the composite band of facial features, Image courtesy NASAS/JPL/malinspace science systems/The cydonia institute

is coming from the west at about 38 degrees above the horizon.

The geological context for the facial features

Libya Montes is located in the Syrtis Major hemisphere of Mars between latitudes 0.1°N and 4.0°N, longitudes 271.5°W and 279.9°W (Figure 7). It is part of the eroded and cratered remains of the southern rim of an ancient impact basin called Isidis Planitia. Much of the region consists of networks of valleys that run northward toward this large drainage basin. It has the appearance that water altered the geology at one time and may have heavily eroded this highland region and deposited sediment in its lowlands. This intriguing area has generated much debate amongst researchers in the scientific community as to how these highly modified and eroded valley networks actually formed[15].

The explanation of the troughs and ridges in this area being eroded by massive water transgression and regression most likely explains the general geology of the area, as presented in Figure 7. There were defiantly two separate geologic events as noted, where the geomorphology of structures to the south, predate the transgression by seas from the north. It is logical to assume the area that supports these conjoined facial features has weathered the erosion caused by the seas retreat.

Paint Shop Pro 8 was the software used to pinpoint the pixel locations of the composite band of facial features and its parameters are marked at x and y. Utilizing the MOC M02-03051 narrow-angle image that

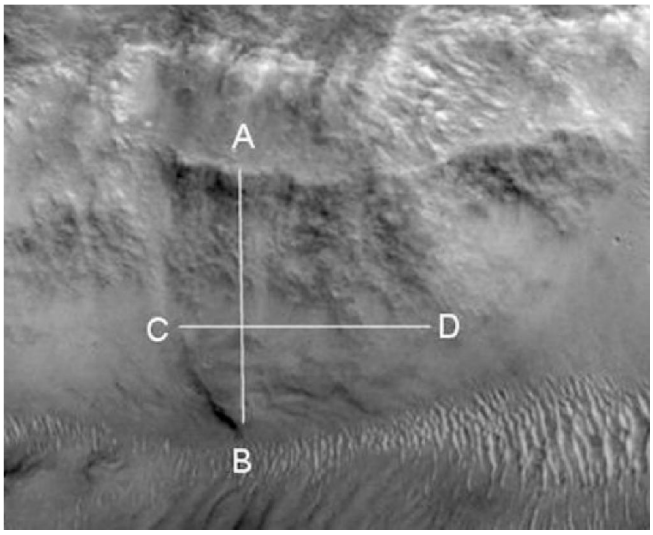

Figure 8 : Dimensions of facial features, (MOC M02-03051), Image courtesy NASAS/JPL/The cydonia institute, image contrast adjusted and notated by the cydonia institute

was not rectified or corrected for slant a set of contour points were selected and the facial features were measured (Figure 8). The facial features are found at x: 1356 y: 8605, this is the center point of the bridge of the nose of the first face. The chin lies at x: 1391 y: 8685 and the mouth lies at x: 1378 y:8654. The y coordinates were used to determine an approximate distance measurement from the chin to the mouth. This is equal to 31 pixels. The image scaled pixel width is 5.78 meters which makes this distance 179.18 meters. The bottom of the crown (in the center area of the forehead) lies at x: 1353 y:8543. The right eye feature x: 1323 y: 8617 and x: 1346 y:8613 equals an eye width of 23 pixels that equals 132.94 meters. The left eye feature x: 1365 y: 8601 and x:1387 y:8600 equals and eye width of 22 pixels which equals 127.16 meters. The distance between the eyes is x: 1346 to x:1365 =19 pixels and 109.82 meters. The distance from the right eye feature to the right side of the face is x: 1323 to x: 1308 = 15 pixels and 86.70 meters.

The most interesting observation derived from measuring the facial formation is its overall square shape (Table 2). The Annotated face which includes all three partial faces present in the formation was measured horizontally (x) and vertically (y). The chin to nose x: 285 y: 408 to x: 285 y: 363 = 45 pixels or 260.01 meters. The nose feature to center line of eyes x: 285 y:363 to x:285 y:330 = 33 pixels or 190.74 meters. The center line of eyes to the bottom of the crown x: 285 y:330 to x:285 y:300 = 30 pixels or 173.4 meters. The right eye feature x: 277 y:328 to x:255 y:328 = 22 pixels or 127.16 meters. The right eye to edge of face x: 255 y: 328 to x:235 y:328 = 20 pixels or 115.6 meters. The left eye feature x:295 y:328 to x:325 y: 328 = 30 pixels or 115.6 meters. The distance between

TABLE 2 : Measurements of composite band of facial features

Point A to B:
A X:280 Y:260. B x:280 Y:410
Difference of the Y positions = 150 pixels X 5.78meters = 867M
Point C to D:
C X:240 Y:352. D X:390 Y:352
Difference of the X positions = 150 pixels x 5.78 meters = 867M

the eyes x: 277 to x 295 = 18 pixels or 104.04 meters. The differences in the eye features become more prominent in the rectified version of the M0203051image.

Topography and morphology of the facial features

The purpose of this segment is to assess the geomorphology of the composite band of facial features in question and determine what natural processes are needed to create its structure. The feature is located on the south facing side of a winding valley wall located in Libya Montes. The co-joined faces are imbedded within a sloping hillside or cliff that flows down into a valley of dunes. The lines marked A, B, C, and D in MOC image M02-03051 (Figure 9) show a truncated ridge line, which at one time would likely have been continuous; indicate the faulting and slumping which appears to have occurred.

The lower portion on the left of the structure, from the cheek to the chin, is raised up above the adjacent rock. This indicates evidence of considerable faulting and suggests the formation upon which the facial features reside may be the result of a slump block[16]. While the crown is formed by the ridgeline, the upper portion of the left side of the block (Marked B in Figure 9) from the crown to the cheek is sunken or imbedded within the cliff face. The material forming the top half of the slump block has a course texture and shows no discerning depositional features such as layering or stratigraphy. None of this material appears to have been dislodged and collected as talus at the base of the wall or cliff indicating its cohesive nature. A visibly fine textured material makes up the lower half of the structure and has the appearance of being wind-blown from right to left. It does not, however, obscure the lower facial features of the faces. If the facial features are correct as suggested, then the design occurred after the slumping took place. One unusual component of the structure which may point to a post slumping design is a U-shape, anticlinal feature (Marked 1 in Figure 9). Its presence is discordant with the other geomorphological features.

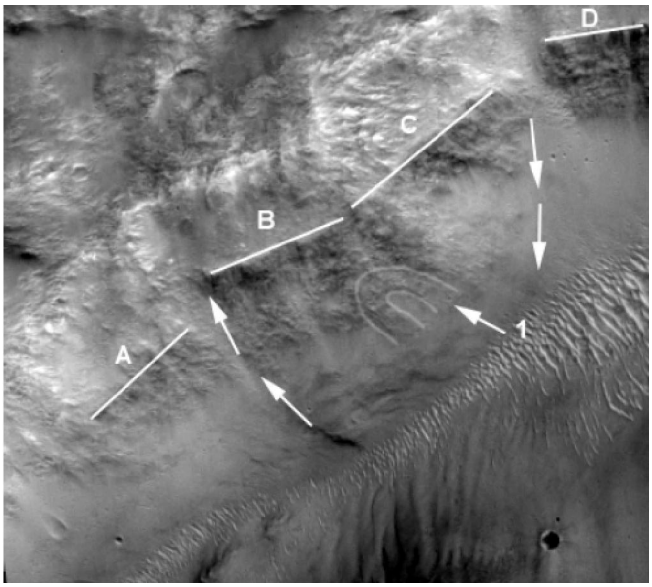

Figure 9 : Valley wall in Libya Montes, Detail of MOC narrow-angle image M02-03051, Image contrast adjusted and notated by the cydonia institute

Aesthetic analysis of the facial features

The first MOC image M20-03051 (Figure 4) of the valley wall in Libya Montes is lit from above by an angle of sunlight that provides an appropriate mix of light and shadow to reveal its sculptural features. The two MRO HiRISE images, ESP_018223_1830 and ESP_018368_1830
(Figure 5 & 6) expose the wall to the direct light of the morning sun, causing a loss of depth and detail. The textural relief of any sculpture is dependent on a fine balance between light and shadow. When a vertical relief is lit from above the light creates shadows thereby giving form and depth to the carved surface. However, when the surface is exposed to direct sunlight, its shadows become degraded with light and its form and depth are flattened.

The shallow topography of the facial features observed with in the valley wall at Libya Montes in MOC image M02-03051 and MRO HiRISE image ESP_018223_1830 and ESP_018368_1830 include a composite band of three conjoined faces that share an expansive crown formation. The features appear to be the result of a composite formation of unrelated geological materials that have been transformed into a sculptural relief carved in to the valley wall. The placement and depth of carving is similar to the monumen-

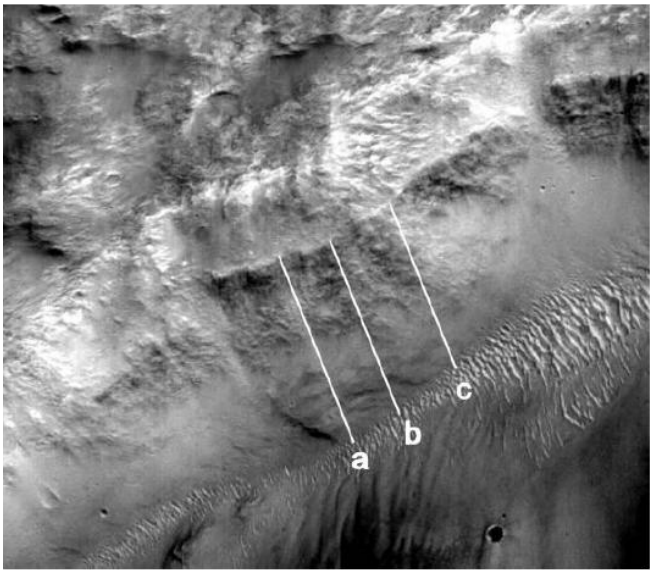

Figure 10 : The three faces, a. First face, b. Second face, c. Third face. Detail of MOC narrow-angle image M02-03051, Image contrast adjusted and notated by the cydonia institute

tal bas relief known as the Stone Mountain Confederate Memorial (Figure 11) produced in DeKalb County, Georgia between 1916 and 1970[17].

The sculpted portrait at Libya Montes merges the right sections of three frontal views of independent portraits (Figure 10). Independent researcher Greg Orme suggested that the overall facial features resembled a composite of partially overlapping faces[18]. Each face has an independent eye, nose and mouth. This composite of three partial faces emerge out of the cliff face in an evenly segmented arrangement of conjoined faces that project a physical expression of tonality and form. The precise alignment of this set of conjoined faces is highlighted in Figure 10 with the aid of three parallel demarcation lines, labeled a, b, and c. The first face is located to the left of the demarcation line labeled a. The second face is located to the left of the demarcation line labeled b. The location of the third face is located to the left of the demarcation line labeled c.

A series of analytical drawings were produced of the composite band of facial feature by utilizing the available data set of MOC and MRO to create a guide or key highlighting the individual facial features (Figure 12, 13 and 14). The first face (Figure 12) has a fault line that frames the left sides of its contours, which continue down to its chin area (Labeled M in Figure 12). Notice the scaly textured, lattice pattern that extends across the cliff face forming a decorative crest at the top of the face (Labeled A in Figure 12). At the center of the crest is a wing-shaped feature formed above a scalloped eyebrow (Labeled D in Figure 12). Just below the horizontal crest that begins on the left side of the face is a large gill-shaped ear (Labeled C in

Figure 11 : Stone mountain confederate memorial, Georgia, Image courtesy amber ramhorn

Figure 12) that extends down into a barbed cheek (Labeled H in Figure 12). Between the wing-shaped feature and the gill-shaped ear is an eye with scalloped eyebrows (Labeled E and D in Figure 12). The eye has a bulbous, almond-shape and aligns in the proper medial to temporal orientation (Labeled E in Figure 12). Under the eye is a round hole or pockmark (Labeled F in Figure 12). A jagged section of barbs extends from the side of the mouth forming full cheeks (Labeled H in Figure 12). On the right side of the face a dark cleft separates the decorative crest shared by the first two faces along demarcation line labeled **a** in Figure 10. The cleft extends down from the top of the decorative crest into the forehead area and follows the vertical line of the nose bridge (Labeled G in Figure 12). The base of the nose is truncated with evidence of a curving nostril and nostril cavity[19] (Labeled I in Figure 11). Below the nose is a soft parted mouth with narrow upper and lower lips (Labeled K in Figure 12)

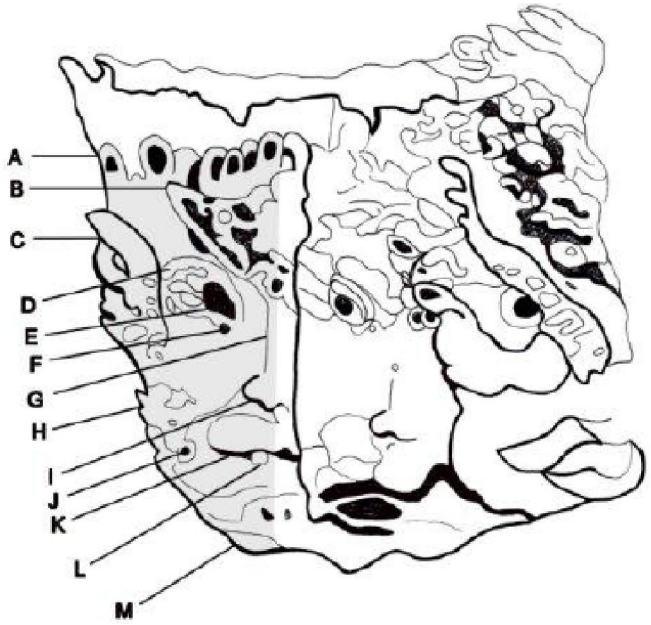

Figure 12 : Analytical drawing highlighting the first face, A. Crest/Crown, B. Winged-shaped emblem, C. Gill/Ear, D. Scalloped eye-brow, E. Eye, F. Hole, G. Nose bridge, H. Barbed Cheek, I. Nostril, J. Hole, K. Mouth, L. Tooth, M. Chin, Drawing by George J.Haas

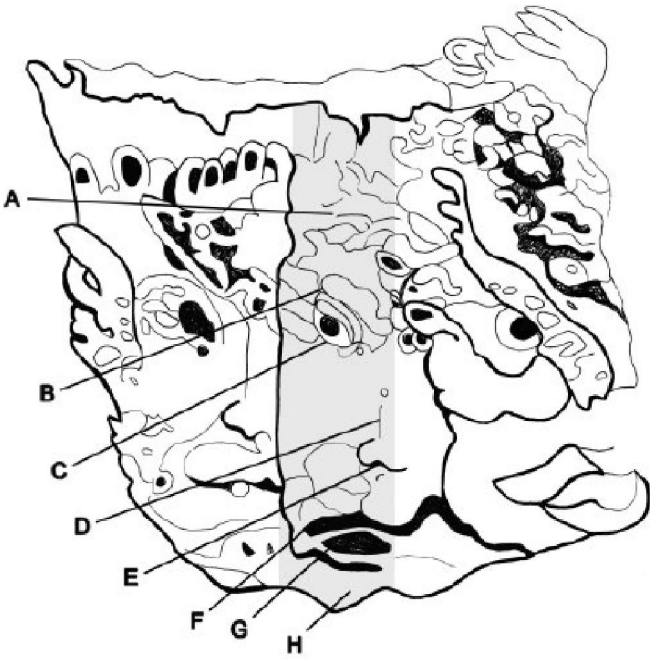

Figure 13 : Analytical drawing highlighting the second face, A. Cliff face, B. Eye brow, C. Eye, D. Nose bridge, E. Nostril, F. Lip and muzzle, G. Mouth, H. Chin, Drawing by George J. Haas

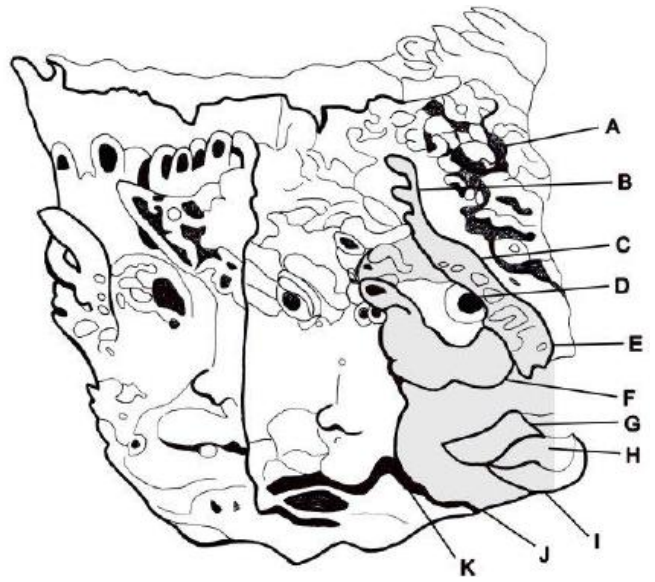

Figure 14 : Analytical drawing highlighting the third face, A. Forehead, B. Barbed antenna, C. Lattes work, D. Eye, E. Nose, F. Winged mask, G. Puckered skin, H. Upper lip, I. Lower lip, J. Chin, K. Cheek, Drawing by George J. Haas

A central tooth rests on the lower lip (Labeled L in Figure 12). Between the edge of the mouth and the lower barbed cheek is a round hole or pockmark (Labeled J in Figure 12), similar to the hole labeled F under the eye. The lower portion of the face rests on a firm chin (Labeled M in Figure 12) that appears to be raised up above the adjacent rock, towards the second face. The scaly features observed in the decorative headdress and gill-shaped ear along with the barbed cheek add defining aquatic attributes of the first face.

The second face projects an intense level of portraiture in its form and plasticity (Figure 13). It features an eye, where the medial canthus of the eye is offset and droops to the right (Labeled C in Figure 13). The eye has a heavy lid and features an eye-brow (Labeled B in Figure 13) with a cluster of wrinkles that extend from the outer edge of the eye. A tapered snout or nose bridge (Labeled D in Figure 13) extends down to a partial nose form with a curved nostril (E in Figure 13). This nose form was also noticed by Orme in his early analysis of this section of the formation[20]. The nose form sits above a board muzzle with a firm lip line (Labeled F in Figure 13) that extends to the right side of the face into the slope of the adjacent cliff. A dark area below the lip forms a broad chin (Labeled G in Figure 13) that spreads into the dunes below (Labeled H in Figure 13).

The third face (Figure 14) has a highly textured forehead (Labeled a in Figure 14) that extends down into a U-shaped structure (Labeled C in Figure 14) that surrounds a large eye form (Labeled D in Figure 14) and blunt nose bridge (Labeled E in Figure 14). The eye is surrounded by a decorative U-shaped mask that resembles a butterfly wing (Labeled F in Figure 14). Its interior construction is comprised of a compartmentalized grid of lattes work that includes the nose bridge (Labeled E in Figure 14). The U-shaped eye mask is topped by a barbed flag or tentacle-like antenna that appears to be raised above the surrounding area (Labeled B in Figure 14). Below the blunt nose is a pair of large puckered lips that fad into the side of the cliff (Labeled H and I in Figure 14). The surface above the upper lip appears to be elevated and stretched, providing a puckered appearance to the lips (Labeled G in Figure 14). This puckered appearance is heightened by the full formed cheeks (Labeled K in Figure 14) and shallow chin (Labeled J in Figure 14), that is partially obscured by the approaching dunes below.

CULTURAL REFERENCE

Mesoamerican art

Although the sliced or shredded arrangement of faces that are merged together to form the composite band of faces on Mars appears unconventional, its overall design follows a long history of tradition in Mesoamerican art and also shares a kinship with modern and contemporary art. The idea of sculpting a fully symmetrical Figure or facial portrait is a Western ideal, which has become the "standard" model supported by most academics and as a result it is widely perceived as a universal norm. However, if one was to reexamine this standard beyond Europe, one would

Figure 15 : The three faces of life (Aztec), Image source: Museo universitario de ciencias, Mexico City, Drawing by George J.Haas

soon become aware that the art works produced by New World cultures, throughout both North and South America, one would quickly realize that symmetry is not the golden rule.

Many of the cultures of Mesoamerica produced figurative sculptures and masks with half and conjoined faces. A prime example comes to us from the Aztec. A composite set of faces is constructed in a horizontal band of three portraits that have been sliced in half and rearranged to represent the Three Faces of Life (Figure 15). The composite set of faces expresses the transformation of a young boy from manhood to death[21].

Contemporary art

Similar uses of sliced and conjoined faces were utilized in a series of paintings produced by American artists Mark Rothko in the early 1940's (Figure 16). Effected by the horrors of World War II Rothko became disillusioned with traditional figurative painting and as a reaction developed a series of painting that explored the dark themes of Greek tragedy. Rothko said, "*It was with the utmost reluctance that I found the Figure could not serve my purposes....But a time came, when none of us could use the Figure without mutilating it*[22]." His new series of paintings create an opposition between the formal structures of a painting with an irrational image that combined the archetypes of Greek friezes and American Indian totem poles with the multiple angles and perspectives views of cubism[23].

When the composite band of sliced faces observed on Mars (Figure 4) is compared with the horizontal rows of conjoined heads produced by Rothko, a common aesthetic approach can be established. A detailed section of the painting The Omen of the Eagle, is offered here for review (Figure 16). The painting depicts a secession of conjoined heads that run across the top portion of the canvas portraying the characters in the Greek myth of Antigone, the daughter of Oedipus. The two conjoined female heads in the cen-

Figure 16 : Mark rothko, The omen of the eagle, 1942 (Detail), National gallery of art, Washington D.C

Figure 17 : Half-faced geoglyph, Caral, Peru 2500 BC, Image source: Smithsonian magazine, August 2002

Figure 18 : Out of many one geoglyphic "facescape" by Jorge rodríguez-gerada, National mall, Washington, D.C. Courtesy, Digital globe's geo eye-1

ter depict Antigone and her sister Ismene, while the two male heads flanking them represent Creon, seen in partial profile on the right side and a half faced portrait of his son Haemon on the left[24]. Notice the splash of brush work that traverses across the tops of the enmeshed heads in Rothko's painting forms a wreath of waving hair that echoes he the structural ridgeline that runs across the top of the faces on Mars (Figure 4).

The critically acclaimed professor and biographer of Rothko's work, James E.B. Breslin of the University of California at Berkeley, maintains that the "emotional origins" of Rothko's conjoined head paintings are artistically and psychologically engaged in the issue of boundary making and boundary braking[25]. Breslin suggests the slicing and fragmentation of the facial features observed in each of these portraits gives the self an elusive multiplicity[11] that reveals an agonized state of self-division[12]. This outward expression of torment and distress was also notice by the Art Historian Anne C. Chave who acknowledged that the sullen eyes of the fused heads appear "sorrowful and pleading" and she points out that the desperate expression of some of these profiled heads appear to be "calling out in anguish[28]." Perhaps the sliced and conjoined faces observed on Mars are meant to communicate a similar emotional impact.

Figure 19 : Sliced face comparison, Left: detail of out of many one, National mall, Washington, D.C., Right: detail of face two, Libya Montes Mars.

TERRESTRIAL COMPARISONS OF FACES IN THE LANDSCAPE

Geoglyphs

The majority of comparative examples of manipulated terrestrial geology come to us in the form of earthworks that were created by ancient cultures throughout North and South America. Many of these huge mounds and earthworks were shaped like animals and human Figures, while others took the form of geometric symbols. It is estimated that the amount of earthworks found throughout North America number in the hundreds of thousands. However, over time almost all of these monuments have been either destroyed by natural erosion or by the rapid expansion

of rural and urban development. Due to the fact that there are a limited number of examples of facial portraits in the available database, only two meet the criteria of this study with comparable detail and content.

The first example is located in the Supe Valley, Peru, just to the north the city of Lima, among the ruins of an ancient city known as Caral (Figure 17). After excavations of this site in 2001 archaeologists revealed this almost forgotten complex as possibly being the home of the earliest known settlement in the New World, dating it's construction to well before 2600 B.C[29]. Just a half-mile to the southwest of the main city complex of mounds and half-buried pyramids is an immense half-faced geoglyph that was created by precisely placed stones. The gigantic D-shaped face has a sliced-in-half nose, a sagging, football-shaped eye, raked hair and a large, gaping mouth. The head has no ear or neck and the forehead is incomplete.

The second example is the result of a recent "facescape" located at the National Mall in Washington, D.C (Figure 18) between the Lincoln Memorial and the World War II Memorial. Cuban American land artist Jorge Rodríguez-Gerada produced a sliced portrait of human face that measures a giant 900 feet long by 250 feet wide[30]. The facescape incorporates a composite portrait of several people that were photographed in the Washington D.C. area, producing one generic face. Although easily recognized as a frontal view of a human face, when viewed from above, this image is not a complete face. It is a sliced, partial portrait comprised of a single eye, half of a nose and mouth. At the top of the head there is evidence of a flat mass of hair and a full chin line that frames out the bottom of the face. The portrait was drawn by using TopCon high-precision satellite navigation receivers on the ground. The image is then brought to life by using different colors of dirt and sand that form the face and create lines that highlight the individual features[31]. When the Rodriguez-Gerada's "Out of Many One" geoglyph is presented side by side to the second facial component of the composite band of facial features on Mars (Figure 19) their similar head tilt and common alignment of facial features become almost indistinguishable.

CONCLUSION AND RECOMMENDATIONS

The three individual facial components that produce the composite band of facial features within the Libya Montes region of Mars are persistent in three images taken by two different NASA spacecraft at three different times over a nine year period. The surface features are accurately depicted in MOC image M02-03051 and again in MRO images ESP_018223_1830 and ESP_018368_1830. The synthetic impression of the conjoined band of facial features remains exceptional in regards to their tonality, plasticity and anatomical appearance. The continuity of cultural references is eloquently expressed within the iconographic motifs of composite and conjoined faces produced in Mesoamerica and the artwork of Mark Rothko where a common aesthetic is strongly supported.

The facial features observed in this composite band of faces are well proportioned and highly detailed despite the actions of natural depositional and erosional agents. While there are known geological mechanisms that are capable of creating and destroying the individual facial features presented in this formation, the natural creation of aesthetically designed formations within the limited boundaries of anatomical correctness seems to go well beyond the probability of chance. Considering the historic study of potentially artificial structures on Mars, beginning with the Face on Mars at Cydonia and Profiled Face at Syria Planum there is growing evidence to support the Artificial Origins Hypothesis.

Therefore we conclude that the surface features that produce the unique facial components of this composite band of facial features in Libya Montes are real and exhibit a level of consistency that is highly suspect of having artificial origins. We recommend that both NASA and the imaging team at the University of Arizona direct the current Mars Reconnaissance Orbiter (MRO) spacecraft acquire addition images of these anomalous surface features. New images should be acquired at different times of day and under various sun angles for further analysis. If these features are found to be consistent, we would encourage the pursuit of "ground truth" and recommend this site as a prime candidate for the study of potential archaeological artifacts on Mars.

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