21st CENTURY

SCIENCE & TECHNOLOGY

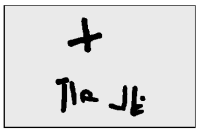
Pitcairn Island Petroglyph Deciphered

by Ross Perfect

The Pitcairn Island petroglyph is located at the base of a steep cliff in a bay known as "Down Rope," at the eastern end of the island. These drawings, which have been the subject of numerous archaeological studies over the past century, have never been fully interpreted. They were first discovered by the settlers from the ship *Bounty* in 1790, together with other native artifacts, and as such were always considered to be Polynesian in origin. However, if this petroglyph is viewed from a Greek/Egyptian perspective, a new story is presented.

The photograph on page 55, and a sketch of its markings, show the entire picture of the petroglyph at Pitcairn Island, which was supplied by the Commissioner of the island, and is included in his publication "Notes for Visitors to Pitcairn Island." In this decipherment, I have extracted each section of the petroglyph, with a detailed explanation for it. The sections have been placed so that the entire picture is read from right to left, and from top to bottom. [Note that, conventionally, white chalk is rubbed over petroglyphs to make the markings stand out in a photograph.]

The top right section appears to be a script depicted by consonants with vowel pointings. With the assistance of the phonetic script developed by Barry Fell,[1] and by reading in a counterclockwise direction from the top, this section is deciphered as follows:



Ph (p)

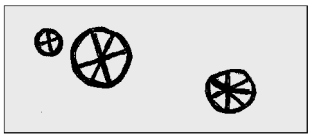
Eng-ari

Phengare = Moon (Greek)

eklei-ekleipo = Be eclipsed.

These three sections together translate as "lunar eclipse."

The bottom section in this first area represents three celestial globes: the Moon, the Earth, and the Sun, aligned at the time of a lunar eclipse, with the Sun



casting the Earth's shadow on the Moon. A line from the Sun, in the lower right-hand corner, through the Earth, and then to the Moon, in the upper left-hand corner, shows the Sun to be approaching summer solstice. This occurs when the Sun reaches its maximum southern declination, and would indicate an eclipse that occurred around December.

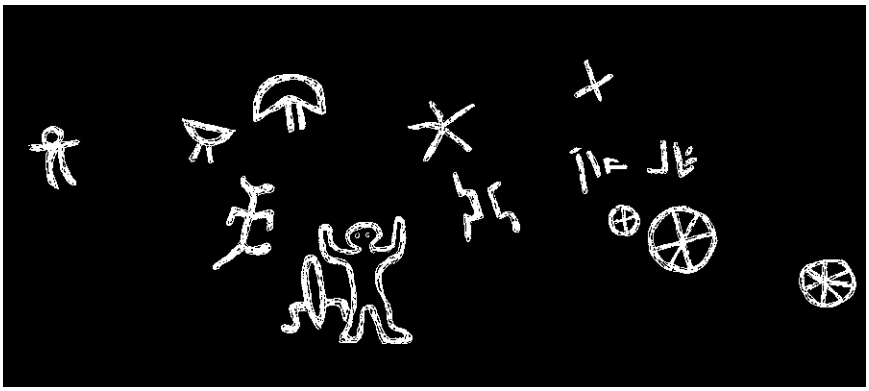
The next section, the middle portion of the petroglyph, is the date stamp. The five-pointed star represents the Pharaoh or ruling monarch. Underneath the star are the Greek numerals 10 and 6, which represent the 16th year of the reign of the monarch (in this case, Ptolemy III).

The two hemispherical shapes in the upper-left part of the picture are representations of the Moon near eclipse. On the extreme left of the petroglyph is a symbolic representation of the constellation Gemini. During the eclipse,

Map drawn by Stephen Kraft

Pitcairn Island, made famous as the refuge of the mutineers from the Bounty in 1790, is located in the Pacific Ocean, at approximately 25° South and 130° West.

The petroglyph at "Down Rope," Pitcairn Island. The rock markings have been chalked in, so that they can be seen in a photograph. This photo appears in an official government publication titled "Notes to Visitors of Pitcairn Island," and is also reproduced in a postage stamp (right).



A copy of the petroglyph, as seen in the photograph above.

which lasted approximately six hours, the Moon was situated in the constellation of Gemini.

The central portion shows a little man expressing gratitude to his God for witnessing this lunar eclipse after travelling halfway around the world. Situated behind the little man is a drawing of a water clock (see also illustration) set up on a stand to record the interval of time between Local Mean Time of noon and the time of the lunar eclipse. This would enable a direct calculation of the longitude of the observer.

The stick-like animal to the left of the little man could represent his logo, a bird. According to Barry Fell, travellers were known as "the People of Manu." The word "Manu" is very common throughout the peoples of the Pacific and translates as "animal," or more generally, "bird."

The Explanation

A copy of Egyptian hieroglyphics from the Tomb of Osiris shows the extensive use of the five-pointed star. This is a reference to "ruling monarch," whose name would be attached.

The Greek occupation of Egypt, which started with Alexander the Great in 323 B.C., was a time of great wealth and culture. During the reigns of Ptolemy II and III, the Library of Alexandria, under the leadership of Eratosthenes, became the center of learning for the Mediterranean region. Major advancements were made in the knowledge of all sciences, astronomy in particular.

Ptolemy III Euergertes came to the throne in 247 B.C., and reigned jointly with his father, Ptolemy II Philadelphus, until his father's death in 245 B.C. The start of the Egyptian New Year, on the first of Thoth (Oct. 23, 247 B.C.) would have recorded the start of Ptolemy III's second regnal year. The lunar eclipse observed at Pitcairn Island on Dec. 14, 233 B.C., would therefore have occurred in his 16th regnal year.

History shows that the ancient Greeks

CLEPSYDRA, OR WATER CLOCK

A water clock, known to the Greeks as "Clepsydra, the Water Stealer." In this water clock, a central, tapered pot leaks water at a regular rate. A pot with parallel sides leaks more slowly as the water level drops, and the Egyptians overcame this by tapering the sides of the pot inwards by 70°.

Source: A. Pavel and F. Honzak, *Living in the Past.* London: Hamlin, 1988

Note the repeated use of the five pointed star, symbol for "ruling monarch," in these hieroglyphics from the Tomb of Osiris in Egypt.

LUNAR ECLIPSES OCCURRING 234 B.C. TO 230 B.C.

Lunar eclipse on Dec. 26, 234 B.C. Overhead at

	U.T.			P.A.	Long.	Lat.
Event	**h**	**m**	**s**	°	°	°
Moon enters penumbra	–21	18	25	68	+87	+20
Moon enters umbra	–22	30	9	58	+70	+20
Total eclipse starts	0	1	1	187	+48	+20
Maximum eclipse	0	12	8	—	+45	+20
Total eclipse ends	0	23	12	62	+42	+20
Moon leaves umbra	1	54	5	291	+20	+20
Moon leaves penumbra	3	6	2	281	+ 3	+20

Magnitude of umbral eclipse = 1.018

Lunar eclipse on June 20, 233 B.C.

	U.T.			P.A.	Long.	Lat.
Event	**h**	**m**	**s**	°	°	°
Moon enters penumbra	17	26	7	104	+148	–21
Moon enters umbra	18	28	43	107	+133	–21
Total eclipse starts	19	30	44	297	+118	–21
Maximum eclipse	20	19	43	—	+106	–21
Total eclipse ends	21	8	45	79	+ 94	–21
Moon leaves umbra	22	10	49	269	+ 79	–21
Moon leaves penumbra	23	13	20	272	+ 64	–20

Magnitude of umbral eclipse = 1.575

Lunar eclipse on Dec. 14, 233 B.C.

	U.T.			P.A.	Long.	Lat.
Event	**h**	**m**	**s**	°	°	°
Moon enters penumbra	6	25	33	90	–46	+23
Moon enters umbra	7	26	36	95	–61	+23
Total eclipse starts	8	30	2	295	–76	+23
Maximum eclipse	9	11	16	—	–86	+23
Total eclipse ends	9	52	30	45	–96	+22
Moon leaves umbra	10	55	57	245	–111	+22
Moon leaves penumbra	11	57	13	250	–126	+22

Magnitude of umbral eclipse = 1.369

Lunar eclipse on June 10, 232 B.C.

	U.T.			P.A.	Long.	Lat.
Event	**h**	**m**	**s**	°	°	°
Moon enters penumbra	–23	17	4	79	+55	–25
Moon enters umbra	0	37	5	63	+36	–25
Maximum eclipse	2	7	14	—	+14	–25
Moon leaves umbra	3	37	28	322	– 8	–25
Moon leaves penumbra	4	57	27	306	–27	–25

Magnitude of umbral eclipse = 0.665

Lunar eclipse on Dec. 4, 232 B.C.

	U.T.			P.A.	Long.	Lat.
Event	**h**	**m**	**s**	°	°	°
Moon enters penumbra	–21	27	57	111	+92	+25
Moon enters umbra	–22	52	16	140	+72	+25
Maximum eclipse	–23	38	20	—	+61	+25
Moon leaves umbra	0	24	22	191	+50	+25
Moon leaves penumbra	1	48	50	219	+29	+25

Magnitude of umbral eclipse = 0.188

These data were prepared by Dave Herald. U.T. is universal time. Note that the penumbral eclipses would be barely noticeable.

Ptolemy III Euergetes, as depicted on a gold coin of Alexandria, after his death. The trident of the sea god Poseidon is at his shoulder. Ptolemy III was king at the time of the exploratory voyage of Maui and Rata, across the Pacific in 232 B.C.

Source: From the British Museum in London, as reproduced in *City of the Stargazers*, by Kenneth Heuer (New York: Charles Scribner's Sons, 1972), p. 41

were familiar with eclipses in general, and lunar eclipses in particular. Thales, who is credited with predicting the first solar eclipse in 585 B.C., was aware that the Sun, Moon, and Earth returned to their same relative positions after a period of 18 years, 11 days—the so-called Saros Cycle. It was recognized in ancient times that an eclipse of the Moon offered a method to determine longitude by being an accurate clock, visible from many parts of the Earth. The exact time that the Earth's shadow comes onto the disk of the Moon is independent of where the event is observed.

An early Greek attempt of this technique, compared the reported timing of the eclipse of Sept. 20, 331 B.C., made in Carthage (in modern Tunisia) and Arbela in the Middle East. The different times read on the clocks when the eclipse began were taken to indicate the difference in longitude of the two cities.

The astronomical representation of the constellation Gemini, as seen in the Northern Hemisphere, is shown at left, p. 58. The two brightest stars in this constellation, α and β, also called Castor and Pollux (the Dioskouroi) were the savior gods of the Greek seafarers.

The drawing on the right, p. 58, shows the Southern Hemisphere's northeastern sky for the month of December. This would have been the sky as observed from Pitcairn on the night of the eclipse, with the full Moon rising with the constellation of Gemini.

The lunar eclipse, which occurred on December 14, 233 B.C., would have been overhead in the mid-Atlantic at 6:25 Universal Time. The Moon then passed over the Bahamas and obtained maximum eclipse over the Gulf of Mexico at 9:11 Universal Time, before terminating over the Western Pacific, off the coast of California at 11:57 Universal Time.

On Pitcairn Island, situated at longitude 130° West, the Moon would have been clearly visible in the northeastern

Lunar eclipse on April 30, 231 B.C.

Event	U.T. h	m	s	P.A. °	Long. °	Lat. °
Moon enters penumbra	11	11	34	179	–127	–25
Maximum eclipse	12	34	25	—	–147	–25
Moon leaves penumbra	13	57	8	232	–167	–26

Magnitude of penumbral eclipse = 0.305

Lunar eclipse on May 30, 231 B.C.

Event	U.T. h	m	s	P.A. °	Long. °	Lat. °
Moon enters penumbra	1	27	3	45	+20	–27
Maximum eclipse	2	56	15	—	– 1	–27
Moon leaves penumbra	4	25	25	348	–23	–27

Magnitude of penumbral eclipse = 0.346

Lunar eclipse on Oct. 25, 231 B.C.

Event	U.T. h	m	s	P.A. °	Long. °	Lat. °
Moon enters penumbra	1	20	25	17	+26	+26
Maximum eclipse	3	17	8	—	– 2	+26
Moon leaves penumbra	5	14	3	290	–30	+27

Magnitude of penumbral eclipse = 0.802

Lunar eclipse on April 19, 230 B.C.

Event	U.T. h	m	s	P.A. °	Long. °	Lat. °
Moon enters penumbra	15	59	38	140	+163	–25
Moon enters umbra	17	10	15	154	+146	–25
Maximum eclipse	18	39	52	—	+124	–25
Moon leaves umbra	20	9	24	260	+102	–26
Moon leaves penumbra	21	20	15	275	+ 85	–26

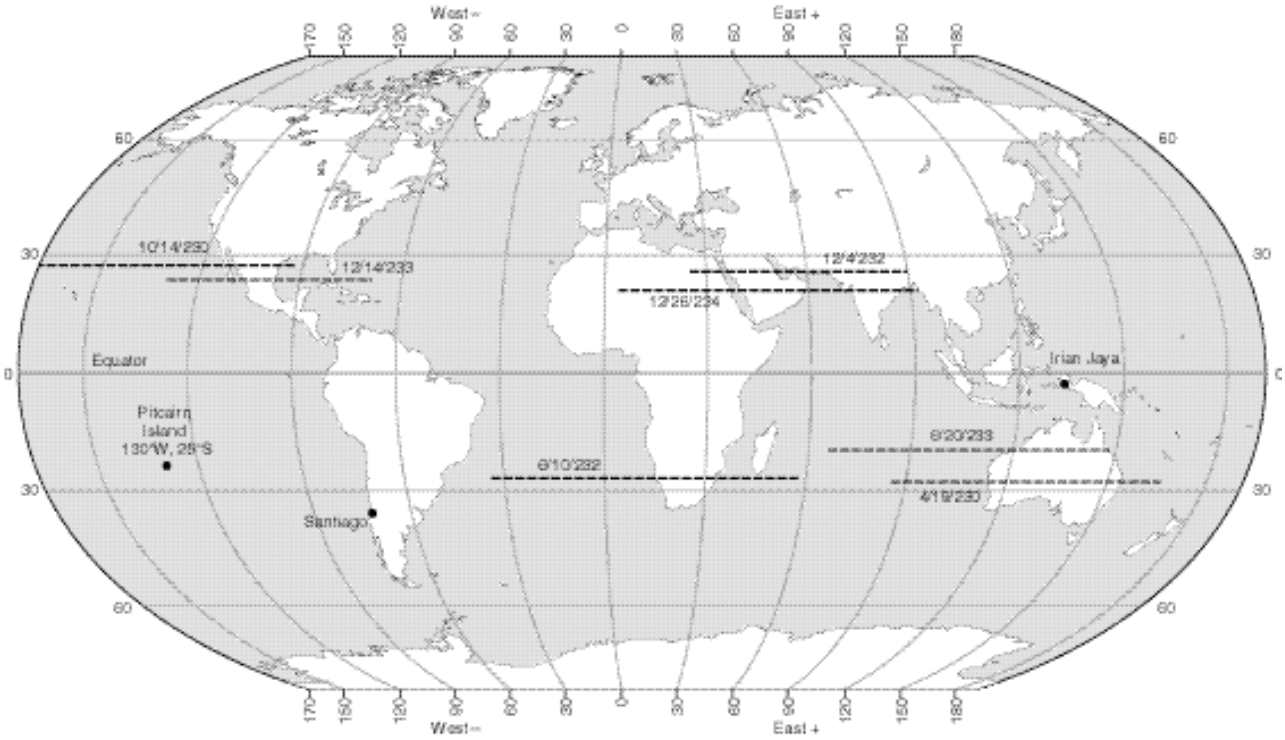
Magnitude of umbral eclipse = 0.742

Lunar eclipse on Oct. 14, 230 B.C.

Event	U.T. h	m	s	P.A. °	Long. °	Lat. °
Moon enters penumbra	8	59	56	44	– 95	+24
Moon enters umbra	10	12	53	33	–113	+24
Maximum eclipse	11	53	23	—	–137	+24
Moon leaves umbra	13	34	1	270	–161	+25
Moon leaves penumbra	14	46	53	259	–179	+25

Magnitude of umbral eclipse = 0.964

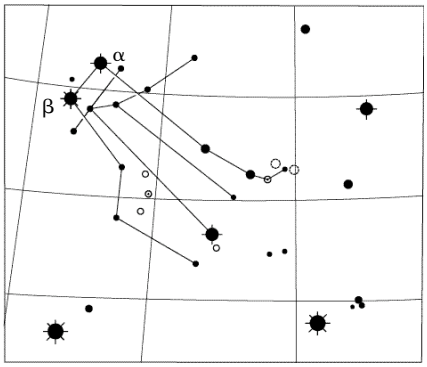
These data were prepared by Dave Herald. U.T. is universal time. Note that the penumbral eclipses would be barely noticeable.



SCHEMATIC OF FULL LUNAR ECLIPSES, 234 B.C. TO 230 B.C.

sky on the evening of Dec. 13, 233 B.C. The Moon would have entered the penumbra at 21:45 Local Mean Time, soon after rising above the horizon. Maximum eclipse would have occurred at 03:12 hours Local Mean Time on Dec. 14, 233 B.C., with the Moon leaving the penumbra at 03:17 Local Mean Time.

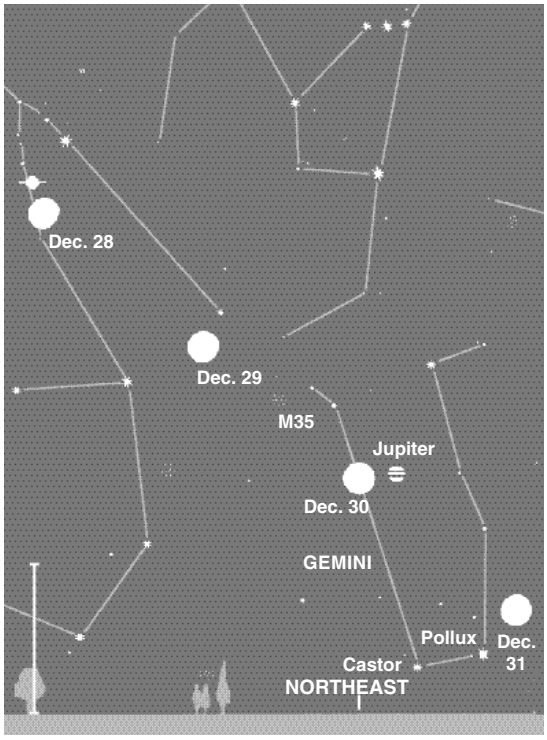
Between Jan. 5, 234 B.C. and Dec. 3, 232 B.C., seven lunar eclipses occurred around the world at regular six-month intervals. The Greeks, having recorded these eclipses on previous occasions and being aware of the regular Saros Cycle, knew in advance when these eclipses would



The constellation Gemini. Its two brightest stars, Castor (α) and Pollux (β), were the savior gods of seafarers in Ancient Greece.

recur. It is therefore highly possible that an expedition was organized to traverse across and map the Pacific Ocean, using predetermined lunar eclipses to establish longitude.

Barry Fell described the drawings on an eclipse recorded in a cave at Irian Jaya in the 15th Regnal Year.[2] This would have been the lunar eclipse on Dec. 26, 234 B.C., which would have been visible at both Irian Jaya and Egypt. Pitcairn was recorded on Dec. 14, 233 B.C., and it is possible that the last eclipse was recorded at Santiago on June 10, 232 B.C.



THE EVENING SKY AS SEEN FROM PITCAIRN ISLAND, DECEMBER 28-31, 233 B.C. *This illustration shows the Moon as it passes through the constellation Gemini during the month of December, as it could have been seen from Pitcairn Island in the Southern Hemisphere, looking northeast.*

Ross Perfect, a New Zealand native, now lives in Queensland, Australia, and has spent considerable time in the South Pacific. He was inspired by the biography of Barry Fell to pursue this analysis of the Pitcairn Island petroglyphs.

Notes

1. See Appendix 1, *Epigraphic Society Occasional Publications*, Vol. 2, No. 21 (1975). Part 1 of the biography of Barry Fell, by his son Julian Fell, appears in the Winter 1999-2000 issue of *21st Century*, "Barry Fell, Epigrapher: Biography of a Renaissance Man," pp. 40-63. Part 2 appears in the Summer 2001 *21st Century*.
2. *Ibid.*