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# IN SEARCH OF THE *PROMONTORIUM SOMNII*

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**Abstract:** In 1863–1866, the French writer Victor Hugo wrote a long text in which he related a visit he made in 1834 at Paris Observatory, where François Arago showed him the Sun rising on the Moon. Amongst the lunar features progressively illuminated by the Sun, he noticed *Promontorium Somnii* and, impressed by this poetic name, he used it as the title of his text. We show that *Promontorium Somnii*, which has since disappeared from lunar terminology, was introduced in 1686 by Jean-Dominique Cassini as one of the benchmarks used for determination of longitudes by the observation of lunar eclipses. There have been questions about the location of *Promontorium Somnii* on the surface of the Moon, and we show that it is a corner of a better known feature mapped in 1651 by Riccioli, *Palus Somni*. We give a translation of the 'astronomical' part of Hugo's text and some comments about the determination of longitudes using lunar eclipses.

**Keywords:** Hugo, Arago, Cassini, van Langren, Hevelius, Riccioli, Keill, lunar maps, longitude

## 1 INTRODUCTION

Recently a request came from Sian Robyns, a doctoral student in literary translation studies at Aotearoa/New Zealand's Victoria University of Wellington School of Languages and Cultures. She had come across a 'prose poem' titled *Promontorium Somnii,* by the French romantic and republican writer Victor Hugo (1802–1885). Notably, Hugo is the author of *The Hunchback of Notre-Dame* (to give its English title) and *Les Misérables*. *Promontorium Somnii*, or Head-land (or Promontory) of the Dream, is a very poetic name, and derives from a lunar feature, hence Hugo's interest. Sian had discovered that the appellation had fallen into disuse, to be replaced, she thought —incorrectly, as we shall see—by *Palus Somni* (the Swamp or Marsh of Sleep). She wanted to know for certain what the feature was, and what it is now called.

Hugo's *Promontorium Somnii* was not published during his life. He bequeathed his papers to the Bibliothèque Nationale de France, the French National Library (de Biasi, 2017). The work is quite long, filling 54 sheets in the manuscript (manuscript NAF 24776, folios 89–142). It is composed of two parts which were evidently written independently and later put together by Hugo (Journet and Guy, 1961). The first part is of astronomical interest, and the second part is philosophical. Only this second part was published, but in 1901 (Hugo, 1901), almost two decades after Hugo's death, for the centenary celebrations of his birth. An English translation of this part appeared six years later (O'Rourke, 1907). The first part, which gives some explanation of how Hugo selected the name *Promontorium Somnii*, was only published three decades later, together with the second one (Hugo, 1937).

The first part of the prose poem relates how in the summer of 1834 France's rising astronomer François Arago (1786–1853, Figure 1) had invited Victor Hugo (Figure 2) to spend an evening at the Paris Observatory.[1] The Moon was in a crescent phase. Through a telescope that magnified 400 times, Arago showed Hugo the ashen light and then the advancing terminator. This experience triggered a long philosophical dissertation, a paragraph in the first part and the whole second part of Hugo's text.

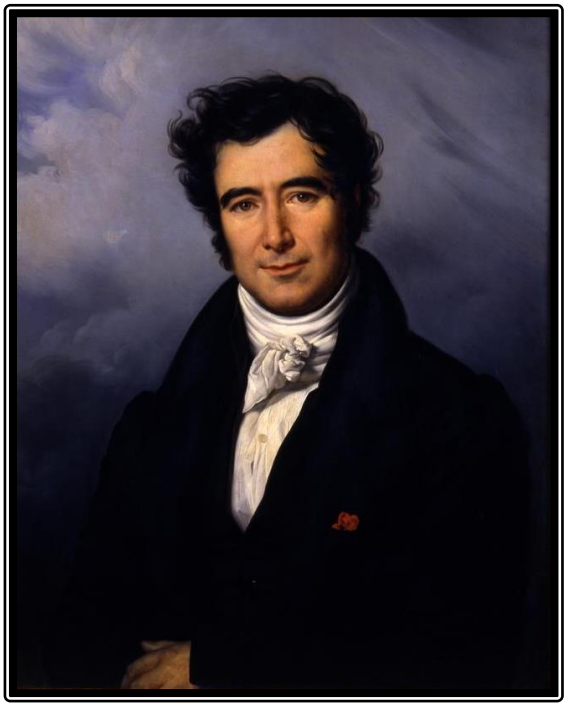

Figure 1: François Arago in 1832, by Charles Auguste de Steuben (1788-1756) (courtesy: Paris Observatory).

## 2 HUGO'S 'ASTRONOMICAL' TEXT

Hugo's *Promontorium Somnii* was written between 1863 and 1866, during his exile in Guernsey from the autocratic regime of Emperor Napoléon III. It formed part of texts prepared in association with the 400th anniversary of Shakespeare's birth and the translation into French of the bard's work by Hugo's younger son, François-Victor (1828–1873).

The 'astronomical' part of Hugo's text is easy and pleasant reading. The rest is philosophical and belongs to another world; this is not an easy text to interpret because of the numerous digressions to which Hugo's writing,


Figure 2: Victor Hugo in 1829, lithography by Achille Devéria (1800–1857) (Wikimedia Commons).

from a more leisurely age, is prone. *Promontorium Somnii* is full of unusual nouns, such as brucolacque, mandragora, strix and ewaipoma, as well as erudite references to historical figures of whom most modern readers will be ignorant: Parens, Jurieu, Pomponatius, Scioppius ... There is a striking digression on the terrors of polytheism, with irascible gods everywhere who must permanently be placated: "The pagan lives panting." The main message, however, is the importance of imagination for the human to be inspired by the world:

> In dreams the strength of man is increased … Revery is fecundation … Plato dreamed Atlantis; Dante, the Paradise … Only do not forget this: it is essential that the dreamer be stronger than the dream. Otherwise danger … A brain may be devoured by a chimera.

We leave a fuller analysis to more expert commentators (Crouzet, 1993; Le Brun, 2012; perhaps also Wall-Romana, 2015; but see Dutton, 1999).

Here is the 'astronomical' part, translated by us with the help of the following web site: www.DeepL.com/Translator:

> I remember that one summer evening, long ago, in 1834, I went to the Observatory. I am talking about Paris, where I was then. I came in. The night was clear, the air pure, the sky serene, the Moon at its crescent; one could distinguish with the naked eye the darkly shaped roundness, the ashen glow. Arago was at home. He made me climb onto the platform. There was a telescope there that magnified four hundred times; if you want to realise what a four hundred times magnification means, imagine the candlestick in your hand as high as the towers of Notre-Dame. Arago set the telescope and said to me: – Look.
>
> I looked.
>
> I was disappointed. A sort of hole in the dark, that was what I had before my eye; I was like a man to whom one would say: look, and who would see the inside of an ink bottle. My eye had no other perception than something like a sudden arrival of darkness. My whole sensation was that which the fullness of darkness gives to the eye in a deep night.
>
> – I see nothing, I said
>
> Arago answered: – You see the moon.
>
> I insisted: – I see nothing.
>
> Arago continued: – Look.
>
> After a moment, Arago said: – You have just made a journey.
>
> – What journey?
> – Just before, like all the inhabitants of the Earth, you were ninety thousand leagues from the Moon.
> – So what?
> – You are now two hundred and twenty-five leagues away.
> – From the Moon?
> – Yes
>
> This was indeed the result of the magnification by four hundred times. I had, thanks to the telescope, made this stride without suspecting it, ninety-nine thousand seven hundred and seventy-five leagues in one second. However, this frightening and sudden approach of the planet [*sic*] had no effect on me. The field of the telescope was too narrow to see the whole planet, the sphere was not visible, and what I could see of it, if I could see anything at all, was only an obscure segment. Arago, as he explained to me afterwards, had directed the telescope towards a point on the Moon that was not yet illuminated. I

continued:

– I see nothing.

– Look, said Arago.

I followed the example of Dante towards Virgil. I obeyed.

Gradually my retina did what it had to do, the necessary obscure machine movements took place in my eye, my pupil dilated, my eye became accustomed, as they say, and the darkness I was looking at began to turn pale. I could not tell what I was seeing. It was blurred, fleeting, impalpable to the eye, so to speak. If anything had a shape, it would be this.

Then the visibility increased, one does not know which trees branched out, compartments were formed in this lividity, the pale next to the black, vague elusive threads marked out regions and zones in what I had before my eyes as if one were seeing borders in a dream. Yet everything remained indistinct, and there was no difference but from pale to dark. Confusion in the detail, diffusion in the whole; it was all the amount of contour and relief that could be sketched in the night. The effect of depth and loss of reality was terrible. And yet the real was there. I was touching the folds of my garment, I was myself. Thus, that too existed. This dream was a land. Probably, someone - who? - walked on it; he was going back and forth in this chimera; this conjectural centre of a creation, different from ours, contained life; perhaps some beings were born there, others also died there; this vision was a place for which we were the dream. These hypotheses complicating a sensation, these sketches of thought attempted outside what was known, made a chaos in my brain.

This impression is of the inexplicable. If you haven't experienced it, you wouldn't know what it is.

[Here a long philosophical digression.]

Suddenly I had a jolt, a flash of lightning, it was marvellous and formidable, I closed my eyes in dazzlement. I had just seen the Sun rise on the Moon.

The lightning made a meeting, something like a peak perhaps, and collided with it, a sort of snake of fire was drawn in this darkness, rolled in a circle and remained motionless; it was a crater that appeared. Some distance away, another flash, another snake of light, another circle; a second crater. "The first is the volcano Messala," said Arago; "the second is the Promontorium Somnii." Then successively shone forth, like crowns of flame borne by the shadow, like the margins of embers in the well of the abyss, Mount Proclus, Mount Cleomeides, Mount Petcevius, those vesuvius and etnas of above; then a tumultuous crimson ran across the blackest part of this prodigious horizon, a jagged line of burning coals bristled up, and settled down, no longer moving, terrible. "It is a chain of lunar Alps," said Arago. However, the circles grew, widened, blended at the edges, exaggerated until they all merged together; valleys were dug, precipices opened, hiatuses spread their lips over which a foam of shadow overflowed, deep spirals sank, frightening descents for the eye, immense cones of darkness were projected, the shadows stirred, bands of rays rose like architraves from one peak to another, knots of craters puckered around the peaks, all sorts of furnace profiles sprang up in a jumble, some as smoke, others as light; capes, promontories, gorges, passes, plateaus, vast inclined planes, escarpments, cuts, were entangled, mingling their curves and their angles; one saw the face of the mountains. All this existed magnificently. Here too the great word had been spoken: fiat lux! The light had made all that shadow suddenly alive into something like a mask that becomes a face. Everywhere gold, scarlet, avalanches of rubies, a stream of flame. It was as if the dawn had suddenly set fire to this world of darkness.

Arago explained to me, which was self-evident, that while I was watching, the Moon's own movement had gradually turned the edge of the dark part towards the Sun, so that at a given moment daylight had entered it.

This vision is one of my deep memories.

There is no more mysterious sight than the irruption of dawn into a darkened universe. It is the right to life asserting itself in sublime proportions. It is the disproportionate awakening. It seems that we were witnessing the payment of a debt to the infinite.

It is the taking of possession of light.

Something like this sometimes happens to geniuses.

Astronomers at Paris Observatory have considered which telescope was used and conclude that it was probably a large Cauchoix mounting that had been acquired for trials, along with one of several lenses made by the optician Lerebours (Bobis, 2013). However, the field of view would have been too restricted and the time required too long for lunar sunrise to reach all the features listed by Hugo. It seems unlikely he remembered the *Promontorium Somnii* from 1834. It is more probable that he only became aware of the poetic name when he came to edit his texts, as suggested by his corrections reported by Journet and Guy (1961). Note that *somnii* is the genitive singular of the second-declension neuter noun

*somnium*, a dream, but many authors chose to take it as a plural, giving the Promontory of dreams. *Somnium* should not be confused with another second-declension noun, the masculine *somnus*, sleep, genitive singular *somni* (already encountered in *Palus Somni*). A single or double *i* has confused some authors. Neison (1876: 152–153), for example, miswrites *Palus Somni* as *Palus Somnii,* thus converting it from the Swamp of Sleep into the Swamp of the Dream.

Characterisations as craters or volcanoes in this text should not be interpreted too literally: *Messala* as the other lunar craters are now known to be impact craters, not volcanoes. Note that Hugo describes *Promontorium somnii* as a crater, which it is not in any lunar map. But deep memory or not, the manuscript shows that Hugo first wrote *Selene* and *Aristarchus* before replacing them with *Messala* and *Promontorium Somnii.* *Selene*, the goddess of the Moon, is a strange name for a lunar feature (rather than the whole Moon), and we have been unable to find any evidence of such a feature, though since 2003 the IAU has approved a crater called *Selene* on the asteroid Eros.

Glued into Hugo's manuscript (folio 142) is a small map that appeared in an 1833 edition of an early illustrated weekly, the *Magasin Pittoresque* (Figure 3). Hugo evidently used the map to ensure that his named features all lay in the same part of the Moon, and were cited in a plausible order of illumination. However, the *Magasin Pittoresque* map shows us that *Aristarchus* (suppressed in the text as we have seen) lies far from the other features he cited.

The *Magasin Pittoresque* map might seem to resolve the location of the *Promontorium Somnii*, with the number '34' indicating it was a peninsula-like feature separating the *Mare Tranquillitatis* ('E') from the *Mare Fœcunditatis* ('G'), close to *Mare Crisium* ('H'). Examining other lunar maps from the nineteenth century and before, it rapidly became clear that many derived from the same source because the *Promontorium* was numbered 34 in them too. The source for the *Magasin Pittoresque* map is obviously Cassini's 1692 map, published only in 1730 (Figure 4). But it also became obvious that the engraver did not pay close attention to detail, because the number '34' wandered to a different location. No reliance could be placed *a priori* on these maps. So, we were back to Sian's question of what feature was the *Promontorium Somnii*.

## 3 LUNAR MAPS AND NOMENCLATURE

*Selenography in the Seventeenth Century* (Whitaker, 1989) and *Mapping and Naming the Moon* (Whitaker, 1999) provided an invaluable introduction to understanding the history of lunar mapping and the origin of lunar nomenclature.

### 3.1 Some Reminders

Before proceeding, it should be recalled that the telescopic appearance of the Moon depends on its illumination. At Full Moon we primarily see albedo differences, whereas relief is revealed under grazing light. All lunar maps are drawn for some given purpose, and highlight particular properties. Lunar maps may aim to represent albedo and relief simultaneously, with greater or lesser success.

It should also be noted that the view in a Galilean telescope is upright, but that the Keplerian telescope with a converging eyepiece produces an inverted image. The earliest lunar maps therefore put north towards the top, but it is towards the bottom in later ones. Furthermore, there is an ambiguity in the use of 'east' and 'west' for the Moon, they being reversed whether right ascension is adopted, as for the celestial vault, or lunar longitudes are considered.

### 3.2 Nomenclature

The first person to give names to lunar features observed through a telescope was the Dutchman Michiel Florent van Langren (1598–1675). His idea was that longitudes could be determined by timing the advancing terminator as it illuminates specific lunar features compared to times observed at a reference longitude. For this the craters needed to be mapped and named (van der Krogt and Ormeling, 2014; see also de Grijs, 2020a; 2020b). The terminator advances impractically slowly for an accurate determination (14 days to cross the lunar disc), but nevertheless this method has been widely used in the seventeenth century.

Only five copies of the 1645 van Langren's map are known. To give two examples of a van Langren name, for the aforementioned *Palus somni* he adopted *Aestuaria Bamelrodia* (the Estuary of Bamelrode), with *Puteani* for the nearby crater now called *Proclus* in honor of his philologist and humanist friend Erycius Puteanus of Bamelrode (1574–1646).

In his *Selenographia sive Lunae Descriptio* of 1647, Johannes Hevelius (1611–1687), who conceived the Moon as a parallel Earth, named about 250 lunar features, mainly from terrestrial ones. His nomenclature did not sur-

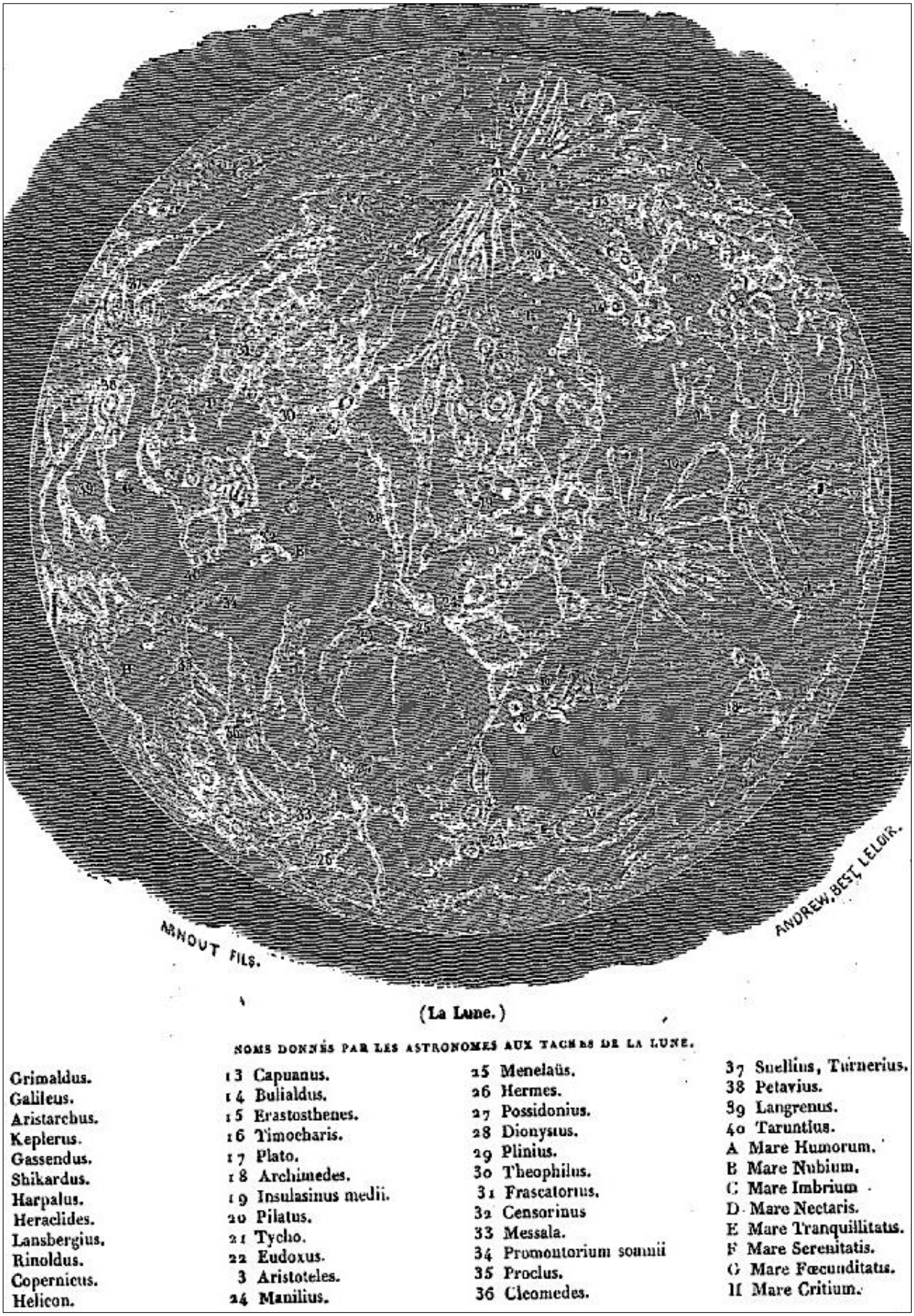


Figure 3: The lunar map in the 1833 *Magasin Pittoresque*. *Promontorium Somnii* (34) is indicated as a sort of peninsula at 20 hours and ⅔ of the radius from the center. The triangular feature just below is *Palus Somni* (not labeled) (after Anonymous, 1833. Bibliothèque Nationale de France).


Figure 4: Cassini's 1692 map with numbered features. Nr. 34 which designates *Promontorium Somnii* is visible with some difficulty at 2/3 of the radius, to the left and at the same height as the center, at the right of *Mare Crisium* ('H'). It clearly relates to the corner of the white triangle, *Palus somni* (not marked) (after Cassini, 1692; courtesy: Paris Observatory).

vive and was replaced in 1651 by that of Giovanni Battista Riccioli (1598–1671) who, in collaboration with Francesco Maria Grimaldi (1618–1663), created a new map of the Moon. Riccioli's nomenclature for 309 objects included astronomers and other scientists, kings such as France's Louis XIV who had given him a prize, and many Jesuits (both Riccioli and Grimaldi were Jesuits). Many of Riccioli's names are still in use.

### 3.3 Introducing the *Promontorium Somnii*

In 1679 Jean-Dominique Cassini (1625–1712) produced his own lunar map (Launay, 2003;

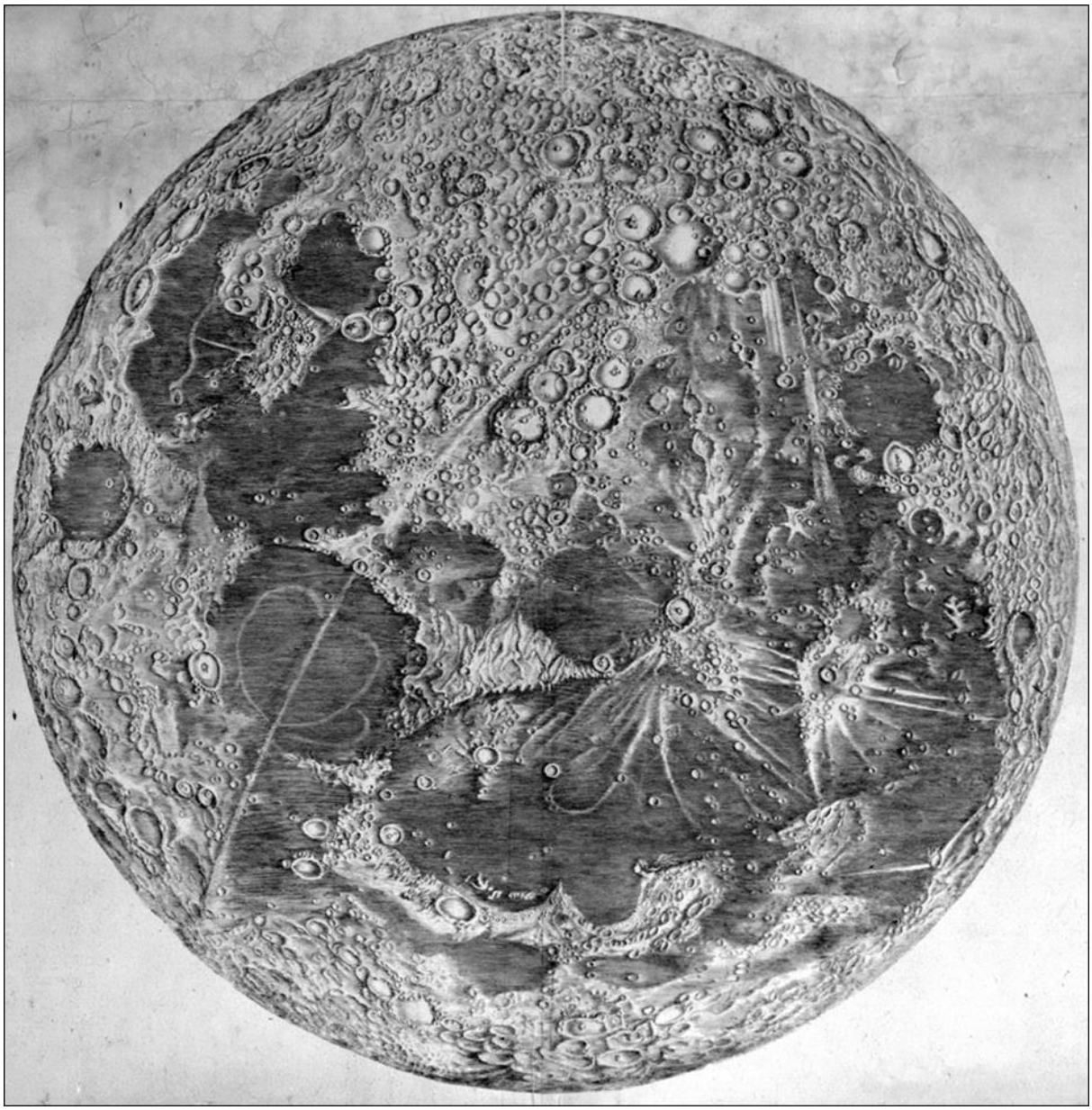

Figure 5: Cassini's map of the Moon was engraved by Jean Patigny and was first printed in 1679 (© Observatoire de Paris, First print, Inv. I 1576).

Launay and Sheehan, 2010), which was presented to the Académie des Sciences in Paris on 18 February. Because of its quality and beauty this became famous, and it was often reproduced (see Figure 5). Gislén et al. (2018) recount the fascinating story of how over a span of eight years Cassini systematically observed the Moon and the professional draftsman Jean Patigny combined his drawings to assemble the 1679 lunar map. However, this gave an unrealistic impression of the Moon as seen during an eclipse, which prompted Cassini to prepare and publish his 1692 map of the Moon in time for the eclipse of 28 July 1692. This is shown in Figure 4. In his research paper, Cassini (1692) used Riccioli's names but also some from Hevelius. Cassini was apparently the first to introduce the name *Promontorium Somnii,* in a paper published in 1686 in the *Journal des Sçavans* (Cassini, 1686: 320). In this paper, he gives in detail the observed times of illumination of different features, including *Promontorium Somnii*, during the second part of the total lunar eclipse of 10/11 December 1685, and these are listed in Table 1.[2]

*Promontorium Somnii* is marked for the first time in Cassini's map of 1692 (Figure 4) as N° 34, at the corner of *Palus Somni* (Cassini, 1692: plate following page 128).

Cassini's map was rapidly adapted by the Dutch mathematician and physicist Nicolas Hartsoeker (1656–1725) who at the time was

living in Paris and shaping telescope lenses for the Observatory, which earned him Cassini's friendship (Fontenelle, 1731). The map was published in *Essay de Dioptrique* (Hartsoeker, 1694), but with some changes in the designations. Item 34 is no more a corner of *Palus Somni*, but a 'tache' (spot) which he names *Alphonsus* (now the crater Lyell), and *Promontorium Somnii* has disappeared.

It was re-introduced in the original edition of Robert Smith's *A Compleat System of Opticks* (1738) and also in its French edition. In a map of the Moon, which is obviously a reproduction of Cassini's map of Figure 4, item 34 is *Promontorium Somnii* at the same place as in Cassini's 1692 map (see e.g. Smith, 1767: plate 65 after page 366).

Table 1: Times of illumination of various features of the Moon during the last phase of the total eclipse of 10/11 December 1685. Note the first mention of *Promontorium Somnii* (after Cassini, 1686: 320; courtesy: Paris Observatory).

| Time | | | Comments |
|---|---|---|---|
| h | m | s | |
| 12 | 19 | 43 | All of Pline and Possidonius |
| 12 | 20 | 15 | All of Dionysius |
| 12 | 23 | 43 | Promontorium Hypathici |
| | | | |
| 12 | 25 | 20 | Promontorium Thophili |
| 12 | 27 | 12 | Promontorium acutum |
| 12 | 28 | 10 | Promontorium Somnii |
| 12 | 30 | 20 | Proclus on the edge of the Caspian |
| 12 | 30 | 15 | From the head of the Snake or Cleomedes |
| 12 | 31 | 42 | The end of Mare Nectaris |
| 12 | 33 | 35 | The centre of the Caspian |
| 12 | 35 | 28 | Snellius and Furnerius revealed |
| 12 | 36 | 13 | The end of the Caspian |
| 12 | 39 | 20 | All of Patavius |
| 12 | 39 | 40 | All of Langrenus |
| 12 | 41 | 20 | The end of the eclipse |

## 4 CONCLUDING REMARKS

It is clear that the *Promontorium Somnii* was the west-south-western corner (in lunar coordinates) of what Riccioli had named the *Palus Somni* on his map of 1651. The name was introduced by Jean-Dominique Cassini in 1686, and depicted in his map of 1692 aimed at bringing uniformity to the timing of the advance of the shadow in lunar eclipses for terrestrial longitude-determination purposes. It can be found in several maps derived from those produced by Cassini. We can speculate that Cassini chose the name because of the poetry of identifying a Promontory of the Dream (*Promontorium Somnii*) as a distinctive point within the Swamp of Sleep (*Palus Somni*).

The name was still used in the nineteenth century but had fallen into disuse by the twentieth century, quite possibly because late reproductions of Cassini's map and other maps were inconsistent. *Promontorium Somnii* is not found on the lunar maps of Nieson, Schmidt or Mädler (Blagg and Saunder, 1913).

It should be noted that Victor Hugo was not the only person to be enchanted by the name *Promontorium Somnii,* although the term may be converted into a plural: in 2004 the Welsh classical composer Alun Hoddinott (1929–2008) set poems by Trevor Fishlock about the Gower Peninsula into a song cycle for baritone, horn and strings titled *Promontory of Dreams* (e.g. Alun Hoddinott Archive, 2019).

## 5 NOTES

1. The relation between Arago and Hugo merits exploration. A few years after Hugo's visit to the Observatory they were founding members and then successive Presidents of *Société des Gens de Lettres*, an association that fought for authors' copyright protection (Montagne, 1889), and still does. A letter from Arago to Hugo dated 17 April 1841 testifies to Hugo's interest in astronomy (Hugo, 1937: 297, footnote 1). The following is a translation, with the help of www.DeepL.com/Translator:

> [To] M. Victor Hugo, Member of the Institute, etc. Place Royale, n°6, Paris
>
> An illness prevents me, my dear and illustrious colleague, from visiting you to give a verbal answer to the questions you have kindly asked to me. I will therefore use the post, but with a formal reservation: you will allow, will you not, a barbaric town councilor, to come for thanking you for your so kind memory?
>
> Galileo is generally regarded as the astronomer who first discovered sunspots. However, the printed work in which this phenomenon was first mentioned is that of John Fabricius, a Dutchman. The dedication letter bears the date 16 June 1611. The observations quoted date back to the beginning of the same year.
>
> We read in the Life of Charlemagne that in the year 807, the planet Mercury projected onto the Sun. It has now been shown that Mercury could not give rise to the observed phenomenon. What was seen in 807 was therefore a real, but very large sunspot.
>
> Other facts reported by the Greek and Arabic astronomers must be explained in the same way.

> The sunspots visible to the naked eye, without the aid of spectacles, are numerous enough to be surprised that the ancients made no mention of them; but there are two reasons which perfectly explain this silence: colored glasses, the glasses with the aid of which we can examine the Sun without being dazzled, are a modern invention; on the other hand, men see with difficulty things of which their imagination does not admit the existence; and the ancients believed in the incorruptibility of the skies.
>
> You are, my goodness, very happy that I have no paper left.
>
> A thousand assurances of my most devoted feelings.
>
> F. ARAGO

2. This paper relates in detail observations of the lunar eclipse of 10 December 1685, made in Paris by Cassini and Philippe de La Hire (1640–1718), in Marseilles by Jean-Mathieu de Chazelles (1657–1710), in Lyons, Avignon, Aix-en-Provence, Toulon, Genova in Italy, Madrid, Nuremberg and Louvo (currently Lopburi) in Siam (present-day Thailand). These observations were mainly made by Jesuits. Cassini's paper was published on 11 November 1686, so the information from Thailand reached Paris less than 11 months after the eclipse was observed there. Although Gislén, (2004), Gislén et al. (2018) and Orchiston (2016) have all written about this Thai eclipse, only Cassini mentioned *Promontorium Somnii*.

Table 2 (on page 466) lists the longitude differences between the aforementioned places and Paris, compared with present values (the observations in Aix-en-Provence and Toulon were judged unusable). The longitude determined for Lopburi was smaller by 24° than those generally adopted previously. However, Cassini remarked that the longitude indicated on the large Paris Observatory map on the terrace of the West tower (Figure 6), drawn

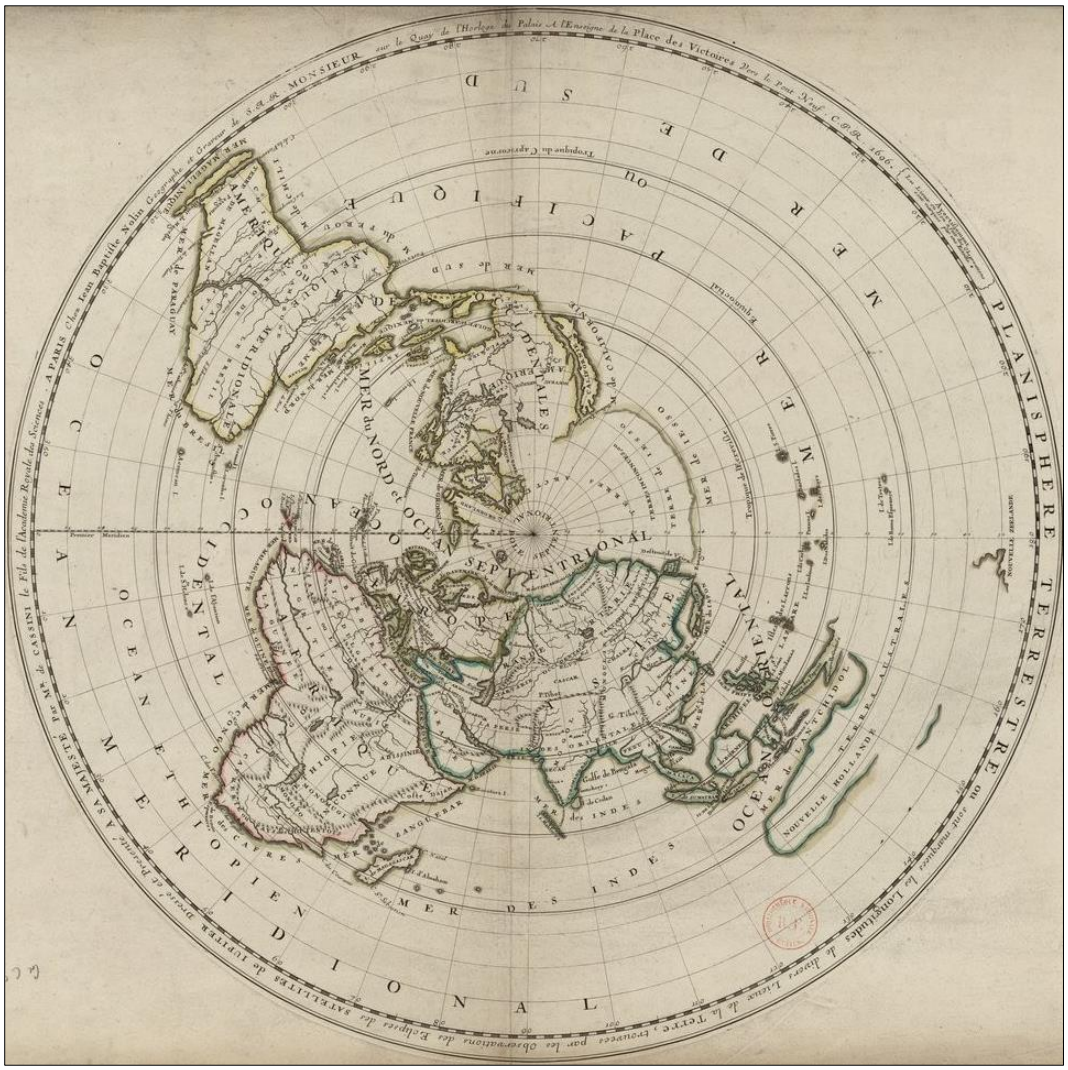


Figure 6: The 1681 world map in the West tower of Paris Observatory (courtesy: Bibliothèque Nationale de France).

Table 2: Longitude differences between Paris and locations in Europe and Siam based on observations of the lunar eclipse of 10/11 December 1685.

| Locality | Longitude Difference | |
|---|---|---|
| | 1692 ° ′ | Present ° ′ |
| Marseilles | 03 15 | 03 02 |
| Lyons | 02 50 | 02 29 |
| Avignon | 02 30 | 02 28 |
| Genova | 07 30 | 06 36 |
| Madrid | –05 30 | –06 02 |
| Nuremburg | 08 08 | 08 44 |
| Lop Buri | 98 32 | 98 19 |

four years earlier, was within 1° of the new determination, but he did not say how it had been obtained or by whom. Wayne Orchiston (pers. comm, August 2022) suggested that this longitude value may have been derived by

> … the talented Sicilian architect and engineer Father Tommaso Valguarnera (1608–1677; Gnolfo, 1974), who arrived [in Ayutthaya, Siam] in 1655 from Macau and stayed in Siam for 15 years. He was then appointed Visitator of the Japanese and Chinese Province and left in 1670, but he returned to Ayutthaya in 1675 and died there just two years later (Orchiston et al., 2021: 231).

As yet, no-one has studied Father Valquamera's astronomical observations during his long stay in Siam, but he would have been familiar with the way in which Jovian satellite phenomena and lunar eclipses could be used for longitude determinations.

Up to now, the Belgian Jesuit, Father Antoine Thomas (1644–1709) has been recognized as the first Western astronomer to carry out observations in Siam (see Orchiston et al., 2021). Although he derived the latitude of Ayutthaya from solar observations made in October and December 1681 and its longitude after observing the lunar eclipse of 22 February 1682, these results were, of course, too late to have been used by those planning the large Paris Observatory map of 1681.

## 6 ACKNOWLEDGEMENTS

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