The Color of the Moon

Moon was visited by Man for the first time not once but twice.

NASA's Apollo 8 carried three men, Frank Borman, Jim Lovell and Bill Anders for the first time close to the moon on Christmas of 1968. The crew orbited the Moon 10 times and broadcasted live television footage to millions of people on Earth before heading back with a risky maneuver the success of which Lovell would announce to ground station with words, "Please be informed, there is a Santa Claus".

In an eerie similarity however, one hundred years earlier in December 186–, another group of three men had already made a trip to the Moon. They too left Earth from the place which would be just two-hour ride from the launch pad of their future firsts (Tampa vs. Merritt Island, Florida.) And they too were unsure of their return. They were Barbicane (the president of the "Gun Club"), Michel Ardan and Captain Nicholl.

How was the color of the Moon described by their first eyes?

* * *

JULES VERNE
Around the Moon (*Autour de la Lune*, 1870)
Chapter Thirteen: *Lunar landscapes*

... The lunar surface swept below the travellers' eyes, and they were desirous of not losing a single detail. So the disc, in the lunettes, appeared at the distance of two leagues and a half. What would an aeronaut perceive at that distance from the earth? It is impossible to say, for the highest ascensions have never exceeded 8,000 meters. This is, however, an exact description of what Barbicane and his companions saw from that height. Large patches of different colours appeared on the disc. Selenographers are not of the same opinion as to the nature of these colorations. They are different and vividly contrasted. Jules Schmidt asserts that if the terrestrial oceans were dried up, a Selenite lunar observer would not perceive upon the globe, between the oceans and continental plains, so great a diversity of shades as are seen on the moon by the terrestrial observer. According to him, the colour common to the vast plains, known as seas, is dark-gray mixed with green and brown. Some large craters also show this coloration. Barbicane was acquainted with this opinion of the German selenographer, shared by Messrs Beer and Moedler. He remarked that observations proved they were right, as against certain astronomers who only admit a gray coloration on the surface of the moon. In some instances, the green color was vividly marked, as proved, according to Jules Schmidt, by the Serenity and the Humours seas. Barbicane also remarked large craters without interior cones, which shed a bluish tint, like the reflection of a steel mirror freshly polished. These colours really belong to the lunar disc, and do not arise from imperfections in the object-glass

of the lunette, nor from the interposition of the terrestrial atmosphere, as some astronomers have asserted. In this respect Barbicane had no doubts whatever. He observed through a vacuum, and could commit no optical mistakes. He considered the fact of these different colours as fully established for science. Now, were these green tints owing to some tropical vegetation maintained by a dense, low atmosphere? He could not yet decide. Further on, he noticed a reddish tint, sufficiently marked. Such a tint had already been remarked at the bottom of an isolated enclosure, known as Lichtenberg's Circus, which is situated near Mount Hercyniens, on the edge of the moon, but he could not discover its nature. He was not more fortunate concerning another peculiarity of the disc, the cause of which he could not discover. This is the peculiarity in question.

Michel Arden was in observation near the president when he remarked some long white lines... 'By Jove, cultivated fields!'

'Cultivated fields!' replied Nicholl, shrugging his shoulders.

'Ploughed at least,' retorted Ardan. 'But what plough-men these Selenites must be, and what gigantic oxens they must harness to their ploughs, to make such furrows!'

...

* * *

APOLLO 8

(One Hundred years later)

Borman: Houston, this is Apollo 8. I'd like to confirm that burn status report. V_{GX} was minus 1.4. V_{GY}, zero. V_{GZ}, 0.2, minus .2 that is. Delta-V_C was minus 20.2.

Carr: Apollo 8.

Borman: Apogee, 169.1; perigee, 60.5.

...

Carr: Roger. We copy your apogee and perigee. [Long pause.]

...

Public Affairs Officer - "This is Apollo Control, Houston. So you've had the first status report from an Apollo crew in lunar orbit. The unmanned Lunar Orbiter spacecraft traversed the Moon, perhaps 10,000 times but this is the first man aboard, in this case Frank Borman, reported to his compatriots here on Earth."

...

Carr: Apollo 8, Houston. What does the ole Moon look like from 60 miles? Over. [Pause.]

Lovell: Okay, Houston. The Moon is essentially grey, no color; looks like plaster of Paris or sort of a grayish beach sand. We can see quite a bit of detail. The Sea of Fertility doesn't stand out as well here as it does back on Earth. There's not as much contrast between that and the surrounding craters. [Pause.] The craters are all rounded off. There's quite a few of them, some of them are newer. Many of them look like - especially the round ones - look like hit by meteorites or projectiles of some sort. [Pause.] Langrenus is quite a huge crater; it's got a central cone to it. [Long pause.] The walls of the crater are terraced, about six or seven different terraces on the way down. [Long pause.]

Carr: Roger, Bill.
Anders: You see it in the upper part of your screen.
Lovell: Say, Bill. How would you describe the color of the Moon from here?
Anders: The color of the Moon looks, ah, a very whitish gray, like dirty beach sand, and with lots of footprints in it.
Lovell: Don't these new craters look like pick-axes striking concrete creating a lot of fine haze dust? [Pause.]
Anders: There's some interesting features out on the other window. Let me switch windows on you now.
...

Public Affairs Officer - "We're theorizing here that that bright spot in the top left side of your picture is the Earth. That's not very clear."
Lovell: We don't know whether you can see it from the TV screen, but the Moon is nothing but a milky white - completely void.
...

Borman: This is Apollo 8, coming to you live from the Moon. We've had to switch the TV camera now. We showed you first a view of Earth as we've been watching it for the past 16 hours. Now we're switching so that we can show you the Moon that we've been flying over at 60 miles altitude for the last 16 hours. Bill Anders, Jim Lovell, and myself have spent the day before Christmas up here doing experiments, taking pictures, and firing our spacecraft engines to maneuver around. What we'll do now is follow the trail that we've been following all day and take you on through to a lunar sunset. The Moon is a different thing to each one of us. I think that each one of - each one carries his own impression of what he's seen today. I know my own impression is that it's a vast, lonely, forbidding-type existence, or expanse of nothing, that looks rather like clouds and clouds of pumice stone...
Borman:...inviting place to live or work. Jim what have you thought most about?
Lovell: Well, Frank, my thoughts are very similar. The vast loneliness up here of the Moon is awe inspiring, and it makes you realize just what you have back there on Earth. The Earth from here is a grand oasis in the big vastness of space.
...
Lovell: Actually, I think the best way to describe this area is a vastness of black and white, absolutely no color...

* * *

Which eyes do you want to believe?

- Amit Bhola, February 18, 2017

Bibliography:
1. ISBN 978 1 84022 670 6
2. https://web.archive.org/web/20071011084016/http://history.nasa.gov/ap08fj/index.htm