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THE DAY AFTER

FORWARD-LOCKING ETHICAL LESSONS FROM APOPHIS' PASSAGE

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Abstract

It's Saturday, April 14, 2029. The day before, the Apophis asteroid passed within 40,000 kilometers of the Earth. The time has come to draw lessons from the few months that preceded this unique event in the history of mankind: the information campaign by the scientific community, the exceptional media coverage, the flowering of conspiracy sites of both religious and non-religious obedience, the various social movements, the clumsy political declarations, etc. Beyond the renewed interest in astronomical sciences and the interest of political powers in planetary defense, the confirmation of Jean-Pierre Dupuy's theory of enlightened catastrophism leads us to wonder about the imperative need to establish a truly global alliance, under the aegis of the United Nations, to take the NEO phenomenon seriously, one of the rare natural phenomena that can present a real danger to the Earth without humanity bearing the slightest responsibility. While scientific input is essential, it is not enough to contribute to the political decisions that may be required. What is needed is a real contribution from the human sciences, in a truly plural approach that takes into account the ideologies, philosophies and religions specific to our species. The threat of an asteroid could constitute a new and important stage in the globalization process in which humanity is engaged.

Keywords: Apophis, catastrophism, ethics

Camille Flammarion and the End of the World

On June 3, 1925, Camille Flammarion entered the sky. During the second half of the 19th century and the beginning of the 20th century, the French astronomer popularized the art of studying celestial objects: his books and lectures inaugurated a movement of popularization of science to which, from 1950, his successors contributed: Fred Hoyle, Carl Sagan, Hubert Reeves, Neil deGrasse Tyson. Alongside strictly educational works, Flammarion inaugurated a particular style: that which consists of mixing fiction and scientific explanations (or speculations). *The End of the World*, a book published in 1894, falls into this style (1).

It is the twenty-fifth century and astronomers discover a comet that threatens to collide with Earth. The whole world is alarmed and panicked: is the end of the world near? Many fear it and human activities, awaiting Friday, July 13, the date of the

shock calculated by scientists, seem to stop: "The courts," writes Flammarion, "no longer had any cause in view: one does not murder when one is waiting for the end of the world." (2) Summoned to the lecture halls of universities and academies, the experts put forward all the hypotheses, all the theories and all the remedies: should we, to save the Earth's atmosphere, store it in immense, hermetically sealed glass vessels? The condenser in pellets? Hermetically seal all the exits from cellars and basements?

Flammarion uses this fiction to give his readers lessons on the chemical composition of the Earth's atmosphere, comets, etc. He also describes the oscillation of public opinion according to the speeches. Until a message is sent by astronomers from Mars (because Flammarion is convinced of the existence of inhabitants on Mars) whose content is unequivocal: the comet will arrive directly on Earth. And the message concludes: "Intense magnetic storm. Stay away from Italy." Or, in Rome, a council is being held, decided by Pope Pius XVIII, initially intended to proclaim the dogma of the divinity of the Pope! Flammarion cannot resist the temptation to show his anticlericalism...

After reviewing the most famous comets in history, Flammarion arrives at the denouement which he recounts thanks to the successive editions of a Parisian daily newspaper, entitled the *25th century*.

The first edition went on sale barely half an hour after the comet's passage:

"Ask for the *25th century*! The crushing of the Pope and all the bishops. The fall of the comet in Rome. Ask for the newspaper!"

"Demand the crushing of the Pope and the cardinals. The Sacred College killed by the comet. Impossible to appoint a new Pope. Ask for the newspaper!"

Shortly after, the second edition was released:

"Ask for the burning of Paris and almost all the cities of Europe, the definitive end of the Catholic Church. The Pope punished for his pride. Rome in ashes ... Ask for the *25th century*, second edition."

The editions follow one another: they announce the appearance of a new volcano in Italy, a revolution in Naples, a new island in the Mediterranean.

Then the miracle happened: the fireball didn't fall on Rome, but quite far from the Italian city: St. Peter's Basilica and the Vatican were miraculously preserved!

Should we therefore exclaim: All's well that ends well? No, because around forty of the European population perished. Moreover, mortality tripled even before the comet's passage, due to lack of food and sleep, fever, overexcitement, cerebral congestion, ruptured aneurysms, etc.

And Flammarion concludes the first part of his book by sharing his conviction:

"The Earth continues to turn in the fertile light of the Sun, and humanity continues to rise towards higher destinies. The Comet had above all been the pretext for all possible discussions on this great and capital subject of The End of the World." (3)

A shower of mysterious stars

I agree, Flammarion is not the only author to have imagined the encounter of our planet with a celestial object, an encounter that would endanger the human species. Making a list would exceed the limits of this contribution. I will only cite Jules Verne and his *Chasse au météore*, a work published in 1901, Hergé and his *Étoile mystérieuse*, published in 1942. The seventh art is not left out with *When Worlds Collide* (1951), *La morte viene depuis spazio* (1958), *Meteor* (1979) or, for the same year 1998, *Deep Impact* and *Armageddon*.

If I chose to evoke the French astronomer rather than another author or another fiction, it is not only because of the centenary of his death. Written more than a century ago, his text, like that of Jules Verne, possesses a kind of "freshness" favorable to an analysis of the profound effects of such a cosmic event on our mentalities as humans and terrestrials.

"All we thought about was the comet, all we talked about was it" (4), wrote Flammarion before the celestial object's passage. In an era, ours, where all information is globally, globally disseminated only to be immediately either forgotten or amplified, we know that this saturation phenomenon is a reality. It poses a great danger: that of preventing us from thinking elsewhere, differently, and beyond. Now, this is an urgent necessity when we find ourselves in a catastrophic situation.

A disaster... and then what?

Because, we must admit, the passage of Apophis near Earth, on a Friday the 13th as Flammarion had imagined, constitutes a catastrophe, even if the asteroid is not expected to hit our planet. A catastrophe in the etymological sense of the term. The Greek by κ α τ α σ τ ρ ο φ η, the Latin by *catastrophā* designate in fact the idea of denouement, of "coup de théâtre". In other words, the idea of an event which is not so much a term as a stage charged with a meaning, a sense or, better still, a revelation.

A catastrophe constitutes the threshold, the sometimes obligatory passage to access another face, another perspective, another theory of reality; perhaps even, to a totally different reality, a reality that is not necessarily worse than the one that is disappearing. In other words, not every catastrophe is a disaster (*dis-aster* or bad star). And human history, individual and collective, can be considered as a series of catastrophes, as long as it is not an identical repetition.

This etymological clarification is a way of introducing the main point of my contribution: whatever we may fear or hope from the passage of Apophis in 2029, we must absolutely think about preparing for what comes next, what comes after. Indeed, if this event is imposed on us by nature, that of the laws of celestial mechanics in particular, and therefore relates to our future (which happens to us without us having the slightest influence), we have the capacity and the responsibility to prepare our future.

Let's remember what happened during the COVID-19 pandemic. When we managed to escape the *latest news* and the opinions of self-proclaimed experts, we liked to imagine the social developments and philosophical reflections we would conduct once the pandemic was over: our health and medical research policies, our attitude towards the elderly, and even our pharmaceutical industries would no longer be the same... Let's face it: none of this has been undertaken, or even begun. The post-pandemic world looks just like the pre-pandemic world. We have not learned all the lessons from this disaster.

For an enlightened catastrophism

Is it possible to act differently on the occasion of the passage of Apophis? Yes, if we think about it now and take the intellectual means necessary to take advantage of this announced event and to avoid the mistakes of the past like those we will make

or see before April 13, 2029. Such a posture falls under what Jean-Pierre Dupuy calls "enlightened catastrophism."

What is it about? The French philosopher starts from the following observation: "If a catastrophe is to be prevented, one needs to believe in its possibility *before* it occurs. If, conversely, one succeeds in prevention, its failure to achieve it keeps it in the realm of the impossible, and the efforts at prevention appear in retrospect to be useless." (5)

To overcome this major obstacle to the use of the precautionary principle: "It's about acting as if we were dealing with a fatality, in order to better divert its course. Misfortune is our destiny, but a destiny that is only such because men do not recognize the consequences of their actions. Above all, it is a destiny that we can choose to distance ourselves from." (6)

In the case of Apophis, what do we want to avoid? Not a collision with Earth, but unnecessary or dangerous behavior similar to that of the past. It is enough to recall that in 1910, during the passage of Halley's Comet, 100,000 people in nightgowns climbed onto the roofs of Constantinople, the inhabitants of Chicago shut themselves in their apartments and Pope Pius X had to prohibit the stockpiling of oxygen tanks in the Vatican! And, on March 26, 1986, during another passage of the same comet, 39 members of the Heaven's sect Gate committed suicide to reach an alien spaceship hidden behind the comet.

The scientific community and political leaders can and even must now take steps to implement all necessary measures to avoid similar situations: they can indeed happen. But we must also think about defining procedures, creating structures that will last beyond the passage of Apophis and which, whatever the situations recorded (and especially if nothing catastrophic occurs), will allow us to learn all the lessons, to inspire the actions and ethics of the future. Because the sky still has other threats in store for us to come.

Around April 13, 2029, the combination of media saturation and the absence of disaster threatens to send us collectively back to the current situation of mixed, even reduced, interest in the NEO topic. We must do everything we can to prevent such a situation.

Conclusion

René Char's elegant poetry addresses only the *Météore du 13 août*.

"May my presence, which causes you an enigmatic unease and an unrelenting hatred, be a meteor in your soul."

This is not a mind game designed to entertain us by scaring us; it is a subject far too serious, the one Flammarion dealt with in his previously mentioned book, the subject of the end of the world. What would have become of a humanity that no longer fascinated, attracted, and frightened by its own end? If we are to seriously consider the techniques that might one day save us from a collision with an asteroid, we must not seek to escape the thought of such a fate.

Notes

(1) Cf. Camille Flammarion, *La fin du monde*.

(2) Camille Flammarion, *op. cit.*, p. 6.

(3) *Ibid.* p. 246.

(4) *Ibid.*, p. 44.

(5) Jean-Pierre Dupuy, *Pour un catastrophisme éclairé*, p. 13.

(6) Jean-Pierre Dupuy, *op. cit.*, p. 63.

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