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# TOPICAL TIME

January-February 2022

## VISIONS OF A BLUE PLANET

"FULL OF BEANS," WARM UP TO TOPICALS AND MORE!

and Vera Felts assured me that would never be the case and that the magazine was (within reason) mine to reshape, redesign and edit as I saw fit. I leapt at the challenge of reshaping this important interface with our organization and threw myself into the project. (Spoiler alert: The next part is a little self-congratulatory, but relevant.)

At the time, *Topical Time* was neither computerized (meaning hard copy was still being mailed to the printer to compose), nor was it in full color. Through Jack's strong leadership, ATA was committed to "Bucking the Trend" of declining memberships in philatelic organizations and was set on modernizing – as well as completely revamping – the publication, as it is the primary (and sometimes only) communication the vast majority of members have with the organization. Suffice it to say that Jack's pursuasiveness and then-new Executive Director Vera Felts' confidence convinced me to join the team.

One of the consistent early struggles I faced with content was attracting more philatelic-based writing, as opposed to "Wikitelic" (a term I coined to describe non-philatelic articles simply illustrated with related stamps). By actively recruiting true philatelic writing as the majority of content, the journal suddenly became relevant and more interesting to more people than those who were just interested in a single topic, and *Topical Time* suddenly became a "must read" in the hobby.

The gamble paid off! Between strong leadership and our "new" journal, not only did we post membership growth for several years, the revitalized journal began consistently garnering gold in philatelic literature competitions (when entered) and ATA and topical collecting in general began to be taken much more seriously by other philatelic groups and organizations. Now, a dozen years later, ATA is in, arguably, a much stronger position than it ever has been.

I'm confident that there's much more I could do for *Topical Time*, but I also realize it's time for even more change. I'm confident there are others who are highly capable of taking the magazine forward and making it even better.

I'm not going anywhere. As Dawn mentioned in her column, I'll still be handling the sale and disposition of donated stamps and collections, and I'll still be an active member of what I have come to believe as the most resilient philatelic organization. Thank you for your support over the years. It's been a great ride!

## About the Cover

The image of Earth on the cover is known as "The Blue Marble," a photo taken Dec. 7, 1972, by the crew of *Apollo* 17 on its way to the Moon, from a distance of about 18,000 miles. The image was so named because of Earth's resemblance to a marble. The shot immediately became iconic and is now one of the most widely distributed photographic images in history, although the actual orientation of the NASA photo, as taken, is with the South Pole at the top.

*Apollo* 17 was the last manned flight to attain an altitude high enough to capture the entire Earth.

# VISIONS OF A BLUE PLANET

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## Abstract

Humankind's relationship with our "Blue Planet" has changed over the millennia. In ancient times, Earth was thought to be the center of everything. Much later, scientific observations that began in the Renaissance led to the gradual acceptance of the heliocentric model. The recent Space Era that started with the launch of *Sputnik-1* in 1957 extended this perspective to show Earth as a lonely, shimmering jewel in the blackness of the cosmos. That changing vision from space has been accompanied by a changing perspective from Earth's surface: There has been an increasing focus on the environment, with myth and metaphor as well as science contributing to the idea of wise stewardship of the planet. In this article, postage stamps and other philatelic items are used to illustrate these ideas.

## Introduction

Earth, the "Blue Planet," has always been our home, but we see it differently now than we did millennia ago – or even a century ago. Our perspective has changed and is still changing. Such changes can be represented through illustrations with symbolic or metaphorical significance that can even be thought of as forming part of a "visual vocabulary" that represents various elements of our Blue Planet. This article presents some philatelic examples of that vocabulary related to the changing perceptions of mankind's relationship to Earth and Earth's place in the cosmos.

Images of various philatelic items are used illustrate the text. For stamps, the *Scott* (*Sc*) and *Michel* (*Mi*) catalog numbers and the years of issue, if available, are included in the captions of the figures.

## Ancient Times

Earth seems limitless compared to the scale of individuals, and the Sun and Moon and the stars apparently move over it, so it was normal that ancient people thought it to be flat and the center of the cosmos. Eventually, though, some sharp-eyed observers realized that approaching sailing ships did not appear as dots in the far distance that resolved themselves into complete ships as they got closer. Rather, the tops of their masts were seen first, then their lower sections progressively came into view. The ships seemed to "rise out of the water." That meant that the sea could not be flat; it had to be curved. If the sea was curved, then apparently flat land might be as well.

The whole Earth might be curved! And, if curved, it had to eventually curve back on itself, like a sphere. That idea from so long ago was a seed planted in infertile land. The odds were against it, but still it tried to sprout.


Figure 1. Eratosthenes of Cyrene (Germany "Marke individuell," personalized stamp), 2012.

In around 240 BC, the Greek mathematician and astronomer Eratosthenes of Cyrene (276-194 BC) measured solar angles at the summer solstice at two Egyptian cities separated by a known distance and, assuming a spherical Earth, determined its circumference through geometrical calculations. The exact value of his distance unit (the "stadium") in modern units is not known, but it falls within a known range, so that we know that his error was between 2% and 16% of the actual circumference, which is just slightly greater than 40,000 km – in either case a fine result for the time! Eratosthenes is featured in a German personalized stamp issued in 2012 (Figure 1).

Another seed that carried a new concept within it was the idea of heliocentrism. Most natural philosophers of the time, including Aristotle (384-322 BC), believed in geocentrism: Earth as the center of the cosmos. However, the Greek mathematician and astronomer Aristarchus of Samos (c. 310 - c. 230 BC), proposed that the Sun is at the center, and Earth and the other planets revolve around it. His heliocentric model is commemorated by a Greek stamp issued in 1980 (Figure 2). How did Aristarchus come to such a conclusion, which was outlandish for the time? We don't know for sure. He may have made geometrical calculations using observations of the size of Earth's shadow on the Moon during a lunar eclipse to show that the Sun must be much bigger than Earth. His model may then have followed from the hypothesis that it was normal for smaller bodies to revolve around larger ones rather than vice-versa. Unfortunately, anything he may have written describing this work has been lost. We know of it only through the writings of others, such as Archimedes (c. 287-212 BC). Though elements of his work lived on with a few subsequent natural philosophers, most others rejected it and the shoot withered and died. The seed then lay dormant for some 1,800 years.


Figure 2. Aristarchus' heliocentric model of the solar system (***Sc*** 1351, ***Mi*** 1410, 1980).

## Early Visions of our Planet: Astronomy and Earth Science

The Renaissance marks the beginning of modern Western science. One of the earliest of the new crop of natural philosophers (scientists) was the Polish polymath Nicolaus Copernicus (1473-1543). He became interested in the cosmos while studying at the university in Bologna, Italy, in the late 1490s, and astronomy would remain his avocation for the rest of his life. He knew of the work of Aristarchus. Copernicus made visual astronomical observations (there were no telescopes yet!) and built his new heliocentric theory of the solar system (Figure 3), which he published in preliminary form in 1514 and in a final definitive work (*De revolutionibus orbium coelestium – On the Revolutions of the Heavenly Spheres*) just before his death in 1543.


Figure 3. Copernicus' 500th anniversary of birth and the heliocentric model of the solar system (Poland Sc B127, Mi BL52, 1972).

The Copernican system went against historical and biblical beliefs and, until around 1700, few astronomers adopted it. However, 17th-century advances such as those by Galileo (invention of the telescope), Kepler (elliptical rather than circular orbits) and Newton (law of gravitational attraction) slowly but surely tipped the balance in its favor.


Figure 4. Child's drawing - symbolic greenhouse effect (Great Britain ***Sc*** 1465, ***Mi*** 1416, 1992).

Depictions of the heliocentric system such as those in Figures 2 and 3 are common today, but must have been unsettling visual symbols in the past for people who believed that Earth was the center of everything.

As Earth's position in the solar system became more and more clear in the 18th and 19th centuries, other lines of scientific investigation considered the geophysical properties of the planet and its atmosphere. In the early 1820s, the French mathematician Jean-Baptiste Fourier (1768-1830) hypothesized that Earth is warmer *with* the atmosphere than it would be without it. In other words, the atmosphere acts as a sort of "blanket" or "greenhouse." This was the first statement of what is now called the greenhouse effect, which is nicely illustrated by a bright child's drawing in a British stamp from 1992 (Figure 4).

After Fourier's work, other scientists established the physical properties of carbon dioxide ($CO_2$), including its effect as a greenhouse gas when added to the atmosphere through the burning of fossil fuels. In 1896, the Swedish chemist Svante Arrhenius (1859-1927) (Figure 5) built on that research to provide the first quantitative estimate of how much atmospheric warming would be expected if the burning of coal were to continue at the 1896 rate. As it turned out, that assumption was completely unrealistic (the assumed amount of burning was much too low), so the details of his forecast were wrong. However, the physical principles that he used in his pioneering work were sound and still underpin modern numerical models of the climate. Arrhenius went on to win the Nobel Prize in Chemistry in 1903.

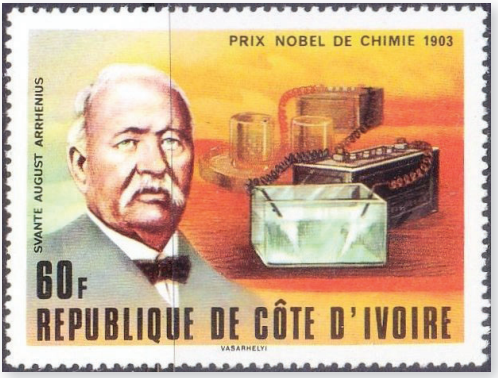


Figure 5. Svante Arrhenius (Ivory Coast ***Sc*** 460, ***Mi*** 546, 1978).


Figure 6. Alfred Wegener and an illustration of continental drift (Germany-Berlin ***Sc*** 9N541, ***Mi*** 616, 1980).

Other types of geophysical research also led to changes in our concept of Earth. Perhaps the best example is the science of plate tectonics and continental drift. In the early 1900s, the German geophysicist and meteorologist Alfred Wegener (1880-1930) was intrigued by geological and fossil evidence that seemed to link different continents through ancient climates vastly different from current ones. He realized that such historical changes in climate could be explained if the continents had "drifted" from one climatic zone to another and coined the term *die Verschiebung der Kontinente* (continental drift). Starting in 1912 he published his results, but the revolutionary theory was rejected by all but a few researchers. It would become solidly established and widely accepted only in the 1960s. Several postage stamps depict the continents like puzzle pieces that fit together in one large supercontinent (Pangaea). One was issued by Germany (Berlin) in 1980 for the 100th anniversary of Wegener's birth (it also marked the 50th anniversary of his death) (Figure 6). In this and other similar depictions, we can see how the east coast of South America fits naturally into the west coast of Africa. How many schoolchildren in the past noticed that "fit"? Wegener surely did. Perhaps that observation started him on his journey to the theory of continental drift! In any case, such images

of the continents as puzzle pieces are beautiful visual metaphors for how Earth itself changes over extremely long periods of time.

## The Space Era: Visions of Earth in the Cosmos

The Space Era began on Oct. 4, 1957, with the launch of *Sputnik-1*, the first artificial satellite, by the USSR. It was a major geopolitical event: The Soviets had "beaten" the United States into space, which set off the "space race" with the USA. In the longer term, though, the lonely little sphere, with its antennas trailing behind, acquired a broader significance. Despite its orbital lifetime of only three months, it became a symbol of the possibilities of technology and space and even hope for the future. The international philatelic community has contributed to this symbolism by commemorating *Sputnik-1* on thousands of stamps and other postal items over the years. Many of them are, of course, from the USSR/Russia. One example was issued in 1962 for the fifth anniversary of its launch. The simple, bold design makes the stamp memorable (Figure 7).


Figure 7. The fifth anniversary of the launch of Sputnik-1 (USSR ***Sc*** 2653, ***Mi*** 2661, 1962).

What would Earth look like from space? Cameras were soon placed aboard satellites. The first dedicated weather satellite, *TIROS-1*, was launched into a low-Earth polar orbit on April 1, 1960. (TIROS is an acronym that stands for **T**elevision and **I**nfra**R**ed **O**bservation **S**atellite). The TIROS series, along with other early weather

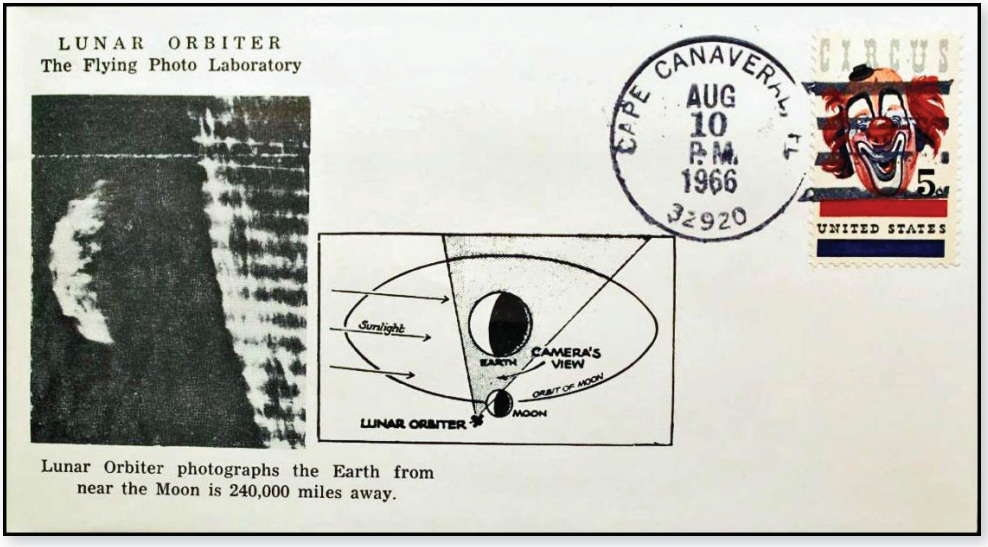


Figure 8. Lunar Orbiter-1 launch cover; Cape Canaveral cancel; cachet includes an image of Earth above the lunar horizon taken on Aug. 23, 1966.

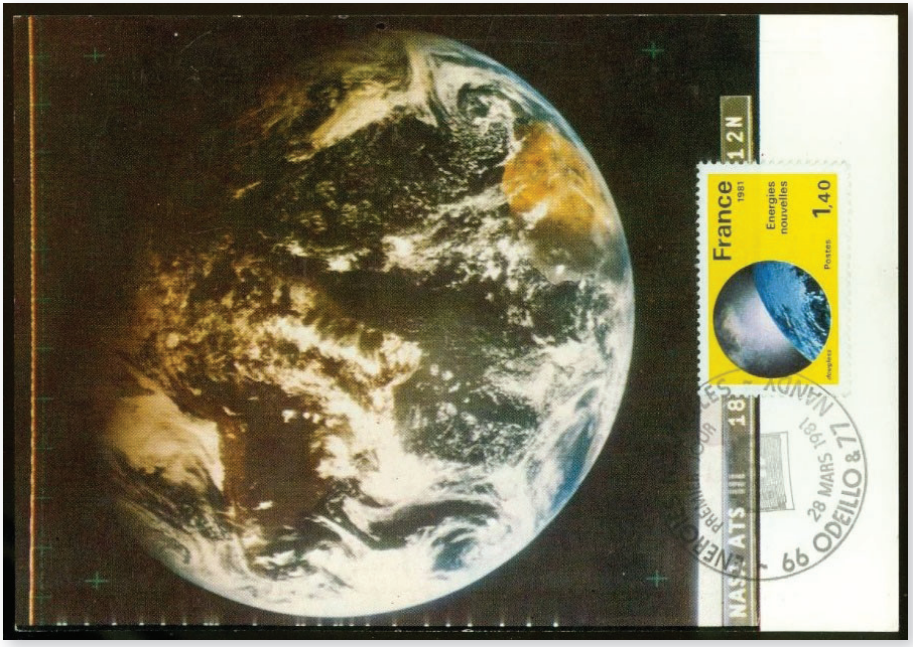


Figure 9. Full-disk color image of Earth taken by ATS-3 satellite on Nov. 18, 1967 (France maxicard, ***Sc*** 1725, ***Mi*** 2253, 1981).

satellites, provided low-resolution black-and-white images of cloud systems over portions of Earth, but could not create full-disk images because of their low orbits. The first primitive full-disk image was finally obtained by a Soviet *Molniya* satellite from near the apogee of its highly elliptical orbit on May 30, 1966.

At about the same time, a few satellites were sent out of Earth orbit, and some of them had cameras that could look back at the planet. On Aug. 23, 1966, the Lunar *Orbiter-1* satellite caught Earth in an image it took while in lunar orbit. A launch cover from Aug. 10, 1966 (Figure 8), reproduces that image in its cachet. The full disk of Earth is present, though only a crescent of the planet is illuminated and visible. To the authors' knowledge, this is the earliest full-disk Earth image to appear in any philatelic item. The stamp and cancel must have been applied to a blank envelope on Aug. 10, with the cachet added later when the image became available. The cachet maker is unknown.

A major step forward in Earth imaging came with satellites placed in a geostationary orbit, which is high enough that the full disk is constantly visible (though sometimes in daylight and sometimes in darkness). The *ATS* (**A**pplications **T**echnology **S**atellite) series of six were testbeds for communications, meteorology and navigation applications from geostationary orbit. *ATS-3* (Nov. 5, 1967, launch) provided the first regular, high-quality color images of Earth's full disk. One of the earliest, if not the actual first one, from Nov. 18, 1967, is reproduced on a French maxicard from 1981 (Figure 9). In it, North Africa is at the far right, South America is at the center-left and North America is in the shadow at the upper left.


Figure 10. Apollo-8 Earthrise (Ghana ***Sc*** 1163, ***Mi*** BL150, 1989; the image has been flipped horizontally to present the correct orientation of the Earthrise, as seen by the *Apollo-8* crew).

In December 1968, the *Apollo-8* mission carried three astronauts in a flight around the Moon. On the 24th they saw Earth rising above the lunar horizon from the lunar module and photographed it. This was the first time that humans had ever seen and photographed the Blue Planet from such a remote location. That *Apollo-8* "Earthrise" is featured on many stamps, such as a souvenir sheet issued by Ghana in 1989 for the 20th anniversary of the *Apollo-11* moon landing. However, it must be flipped horizontally to present the proper orientation. Figure 10 shows that flipped image. In it, Earth's north is at the lower right, and the western parts of Africa are seen just above (i.e. to the west of) the terminator. Other similar Earthrise images were later recorded during the *Apollo-10* and *Apollo-11* missions. Taken together, they became a stunning visual icon: a shimmering blue jewel (our home!) in the inky blackness of space, contrasted with the lifeless gray of the lunar surface.

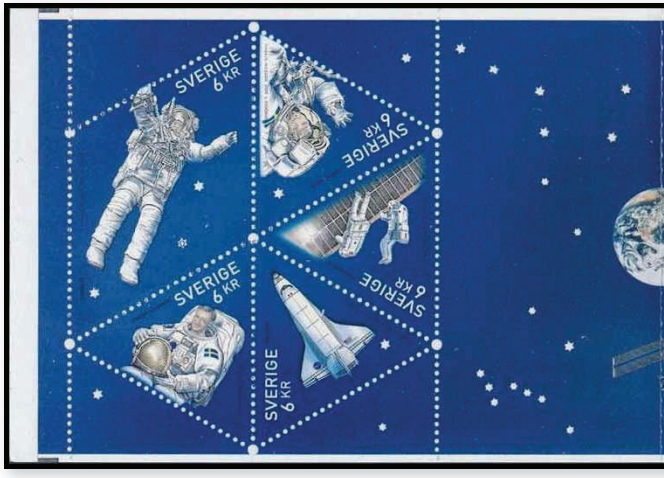


Figure 11. The 40th anniversary of the Blue Marble photograph (United States commemorative cover, Mission-57 cachet, Dec. 7, 2012).

This visual iconography of the Blue Planet was strengthened by a photograph taken by the *Apollo-17* crew on Dec. 7, 1972, just after the command module left its Earth parking orbit and headed for the Moon. That image has been widely distributed and reproduced on hundreds of stamps and other philatelic items, usually as an adjunct to some other space-related theme. It is featured in detail on a 2012 cover from the United States issued for its 40th anniversary. In it, the full disk is completely illuminated and Africa, Antarctica and the surrounding oceans, as well as various swirling cloud systems, are clearly visible (Figure 11). The image came to be referred to as the "Blue Marble" since this view of Earth made the astronauts think of a glass marble hanging in space. This image is one key element of the new visual vocabulary of Earth that has been developing since the beginning of the Space Era.

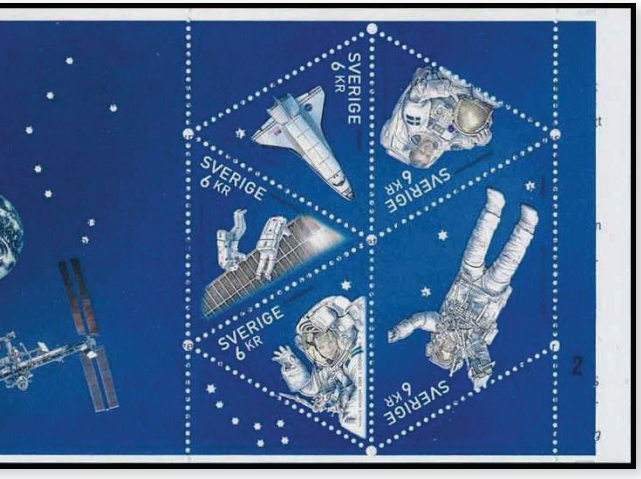


Figure 12. Earth in space as the satellite DSCOVR might see it (Sweden ***Sc*** 2621f, ***Mi*** MH326, 2009).

Advanced weather satellites in geostationary orbit now routinely provide various types of full-disk Earth images, but they cannot provide a constant stream of visible-light images in which the disk is completely illuminated, since their orbit takes them from the day side to the night side and back again once each 24 hours. The satellite *DSCOVR* (**D**eep **S**pace **C**limate **O**bser**v**ato**r**y, Feb. 11, 2015, launch) has been placed in a different type of orbit: it is found at a point between Earth and the Sun known as the Lagrange

point L1 (at about four times the Earth-Moon distance from Earth). At L1, a unique balance of forces allows a satellite to "hover" between Earth and the Sun, so that it can continuously view both. *DSCOVR*'s primary mission is to monitor solar activity and provide data for space weather forecasts, but it also looks the other way,

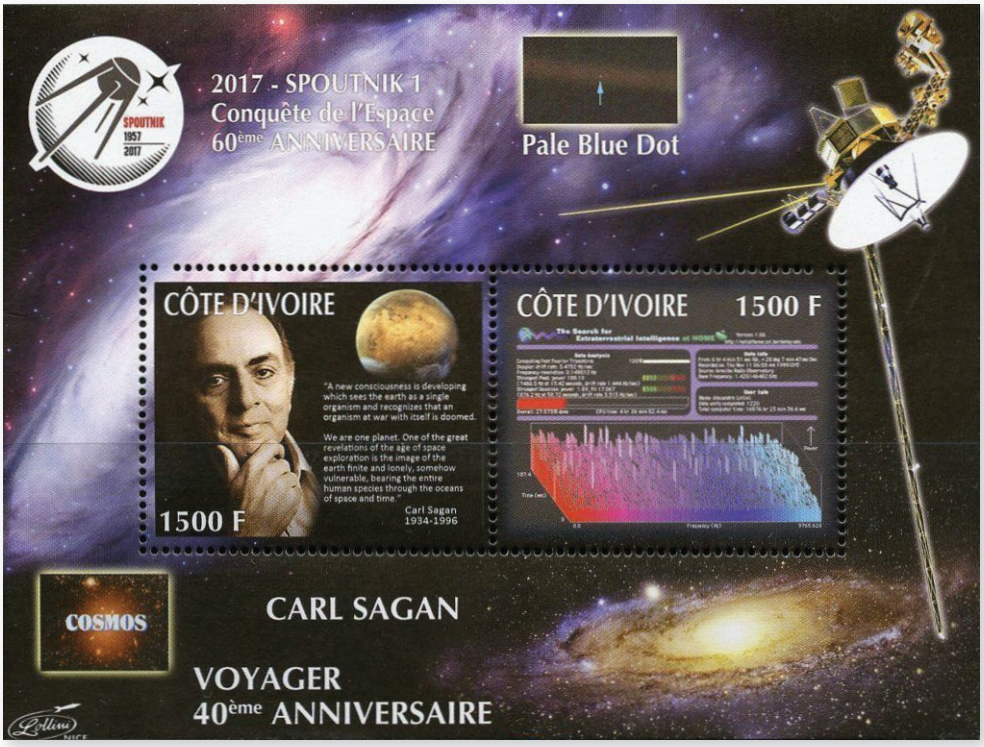


Figure 13. Carl Sagan (in stamp 'a'), Voyager satellite and the "Pale Blue Dot" (Ivory Coast MS2, no catalog numbers available, 2017).

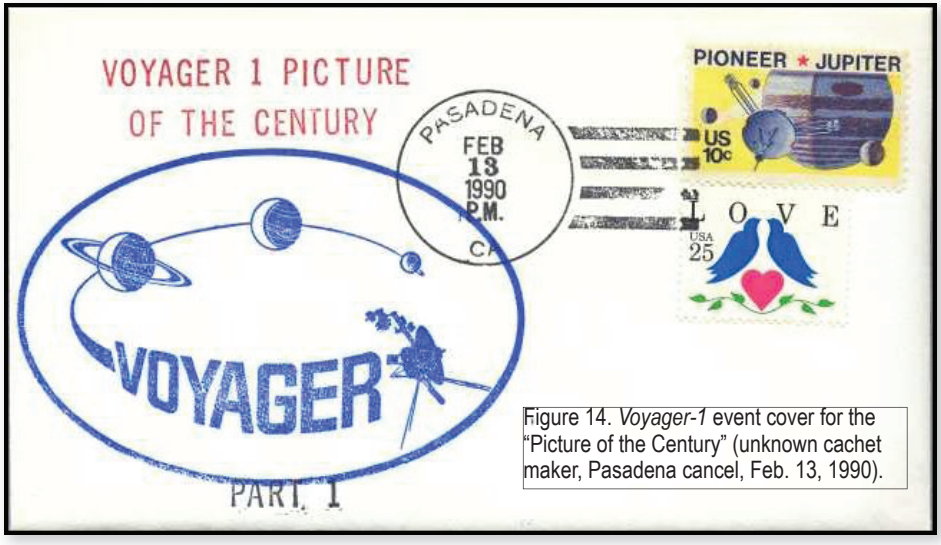


Figure 14. *Voyager-1* event cover for the "Picture of the Century" (unknown cachet maker, Pasadena cancel, Feb. 13, 1990).

toward Earth, and provides images of the full disk which is constantly illuminated from its vantage point. Humankind finally has images that show the jewel-like Blue Planet rotating on its axis, while hanging in the black immensity of the void – truly a marvelous and humbling sight! Some of those Earth images and animations can be found at the website ***www.nesdis.noaa.gov/DSCOVR/***.

The authors are not aware of any postal items that show Earth as seen by *DSCOVR*. The best-known philatelic analogy is a Swedish booklet pane of stamps issued in 2009 (Figure 12). The Earth image in it is in fact the Blue Marble 1972 image. If we ignore the ISS (International Space Station) in the foreground and imagine a black rather than a blue background, then this booklet pane may approximate what Earth looks like from *DSCOVR*'s vantage point.

Artificial satellites have now explored all the planets of the solar system. At least one has taken advantage of its remote vantage point to look back at Earth. The satellites *Voyager-1* and *Voyager-2* were launched in 1977 on missions to explore Jupiter and Saturn. *Voyager-1* flew by Saturn in 1980 and continued toward deep space. The astronomer and planetary scientist Carl Sagan (1934-96) (Figure 13), who was a member of the imaging team, suggested that its cameras could be turned back toward Earth for one "last look" at our planet.

On Feb. 14, 1990, when *Voyager-1* was speeding away from the solar system beyond Neptune at 40 astronomical units (AUs) from the Sun (for comparison, Earth is 1 AU from the Sun), mission controllers commanded it to look back and take a series of 60 images that were then used to create a "family portrait" of the solar system. The photograph including Earth shows our planet as a single, pale, bluish pixel of light against a dark background. With it, we have come from a completely Earth-centric idea of our home to one in which Earth is no more than a mote in the immensity of space. In a lecture at Cornell University on Oct. 14, 1994, Sagan presented the image and shared his ideas about its significance. He said that "the delusion that we have some privileged position in the universe [is] challenged by this point of pale light" and that the image "underscores our responsibility … to preserve and cherish that Pale Blue Dot, the only home we've ever known." Figure 13 also includes the only example known to the authors of that Pale Blue Dot image on a stamp.

A *Voyager-1* event cover commemorates the planetary portrait with the text "*Voyager-1*, Picture of the Century" (Figure 14).

## Mythology: Mother Earth/Gaia

Even in the modern era, the realm of myth as related to Earth remains alive and well and, indeed, possesses its own iconography.

In the 1970s, British chemist James Lovelock (b. 1919) and American evolutionary theorist Lynn Margulis (1938-2011) (no stamps for either are known to the authors) jointly developed the Gaia hypothesis, which proposes that *"organisms interact with their inorganic surroundings on Earth to form a synergistic, self-regulating complex system that helps to maintain and perpetuate the conditions for life on the planet"* (definition from Wikipedia). This idea has not attracted a scientific consensus, but in terms of myth and metaphor can be thought of as a sort of modern equivalent to the much


Figure 15. Tellus (Earth Mother) (Somalia ***Sc*** 122, ***Mi*** Italian Somaliland 156, 1930, overprint and changed color of Italy ***Sc*** 251, ***Mi*** 348, also from 1930).

older idea of "Mother Nature" or "Mother Earth" (which can be defined as Earth and its biosphere as the provider and sustainer of all life). That metaphor and its visual vocabulary are found across many cultures throughout history, as well as in some aspects of modern culture.

For example, the Roman Goddess *Terra Mater* (Earth Mother), also known as Tellus, was associated with agricultural abundance, prosperity and fertility. In some iconography, she has four children who can be associated with the four seasons. Her Greek counterpart is Gaia. In the past, she was generally personified in human


Figure 16. Nang Thorani/Mae Thorani (Laos ***Sc*** C75, ***Mi*** 297, 1970).


Figure 17. Allegory of Mother Earth (in an agricultural context) (Mexico ***Sc*** 777, ***Mi*** 822, 1942).

form. For example, one panel in the *Ara Pacis Augustae* altar in Rome has been interpreted to show Tellus and is often referred to as the "Tellus panel." In that interpretation, Tellus is shown nurturing infants amid agricultural abundance. The panel is reproduced in some members of a set of Italian stamps issued in 1930 for the 2000th anniversary of the poet Virgil (70-19 BC). Overprints of that set from various Italian colonies also exist. One such stamp is shown in Figure 15.

Such personifications of Earth Mothers are not limited to Western cultures; they are found in many

others from around the world. For example, Nang Thorani or Mae Thorani (Lady Earth or Mother Earth) is well-known in parts of southeast Asia. She appears in some postage stamps such as one issued by Laos in 1970 for the 25th anniversary of the UN (Figure 16).

Mother Earth can also be presented in a different form of visual vocabulary: an allegory in which she is combined with a physical feature of Earth, such as terrain or the biosphere, rather than a pure personification. The resulting image can be a powerful metaphor, reminiscent of the First Nations' philosophy that humans belong to Earth, rather than vice-versa. The authors have not found any postage stamps that refer to Gaia specifically in this sense, though one striking stamp from Mexico does present an allegorical image that perfectly encapsulates this idea of Mother Earth (Figure 17).

The South American equivalent of Mother Earth is Pachamama (*Madre Tierra* in Spanish), and there are at least two postage stamps that nicely fit this context and present her as an allegorical integral part of Earth and the biosphere (Figures 18 and 19).


Figure 18. *Adoración de la Pachamam* (Bolivia ***Sc*** C318, ***Mi*** 840, 1972).

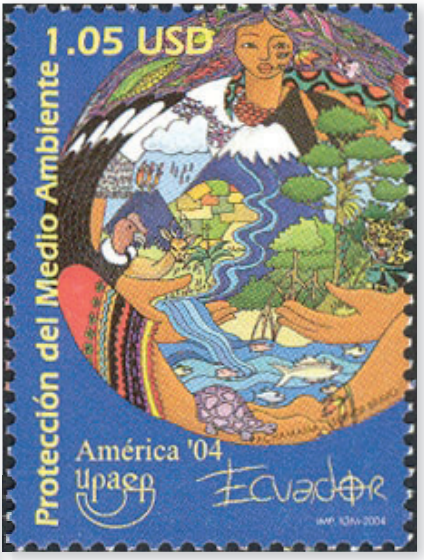


Figure 19. Allegorical Pachamama (Ecuador ***Sc*** 1719, ***Mi*** 2808, 2004).

## Modern Visions of Earth's Environment

Of course, a visual vocabulary related to Earth is not limited to images from space, nor to the mythology of Mother Earth. Environmental studies have become part of the explosion of scientific information in the Space Era. This section briefly discusses some philatelic visual symbolism related to a few areas of environmental research.


Figure 20. Rachel Carson (Marshall Islands ***Sc*** 711e, ***Mi*** 1211, 1999).

Already in the 1950s and '60s, the work of some scientists formed the basis of what would become the environmental movement. Perhaps the most well-known precursor is the American marine biologist and conservationist Rachel Carson (1907-64) (Figure 20). Her research on environmental problems, particularly those caused by synthetic pesticides, was published in popular form in 1962 in her book *Silent Spring*. It became a classic and an icon for the nascent environmental movement.


Figure 21. Symbolic effect of acid rain (Turks and Caicos Islands, ***Sc*** 972, ***Mi*** 1093, 1992).

Starting in the 1960s, the phenomenon of acid rain in eastern North America and elsewhere in the world became a subject of concern. It was found that emissions of sulfur and nitrogen compounds from various human activities was the principal cause of acid rain, and that it had clear adverse impacts on plants, aquatic life and infrastructure. A surprising number of postage stamps referring to acid rain have been issued. Some of them show one part of a tree in health in blue skies, and another part dead or dying in a darker atmosphere, mixed with industrial pollutants. Those concise visual statements are striking symbols of the problem. One example is found in a stamp from the Turks and Caicos Islands, issued in 1992 for the Rio Earth Summit (Figure 21). Various national regulations and international agreements (such as the Canada-U.S. *Air Quality Agreement* of 1991) were successful in minimizing the acid rain problem.

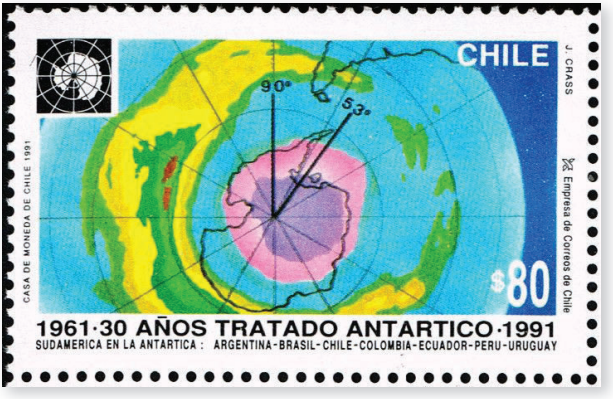


Figure 22. Antarctic ozone hole (Chile ***Sc*** 974, ***Mi*** 1466, 1991).

In the 1970s and early 1980s, theoretical and observational work showed that manmade chlorofluorocarbon gases (CFCs) and freon used in aerosol spray cans and refrigeration were causing the upper atmospheric ozone layer to become thinner, particularly in the far reaches of the southern hemisphere. As a result, increased ultraviolet radiation reaching the surface was causing some adverse effects in humans and marine life. The Antarctic ozone "hole" became a powerful symbol of the problem, and several postage stamps show a map of the hole. Such images are concise visual

statements of the problem and have become part of a kind of global visual vocabulary related to environmental issues. A nice example is found in a stamp issued by Chile in 1991 (Figure 22). In 1987, in an agreement known as the Montréal Protocol, nations from around the world agreed to phase out various substances responsible for ozone depletion. It has since been strengthened by many revisions, and the ozone layer has started to recover. This is an international success story.

As already pointed out, the basis of the science of global warming stretches back to the 1800s. The long-term anthropogenic global warming is continuing (some recent years are the warmest ever recorded since instrumented observations began) and associated climate change effects are now taking place. In at least one postage stamp, Earth is in the frying pan! (Figure 23).

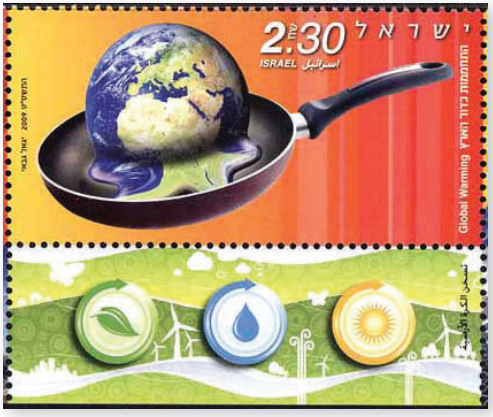


Figure 23. Earth melting in a frying pan (Israel ***Sc*** 1778b+tab, ***Mi*** 2064+tab, 2009)

In terms of visual vocabulary, the polar bear is a common and perhaps now overused symbol of global warming and climate change. Nevertheless, the symbolism is clear and has become instantly recognizable in the

Figure 24. "Melting ice – a hot topic?" (Indonesia ***Sc*** 2104, ***Mi*** BL229, 2007).

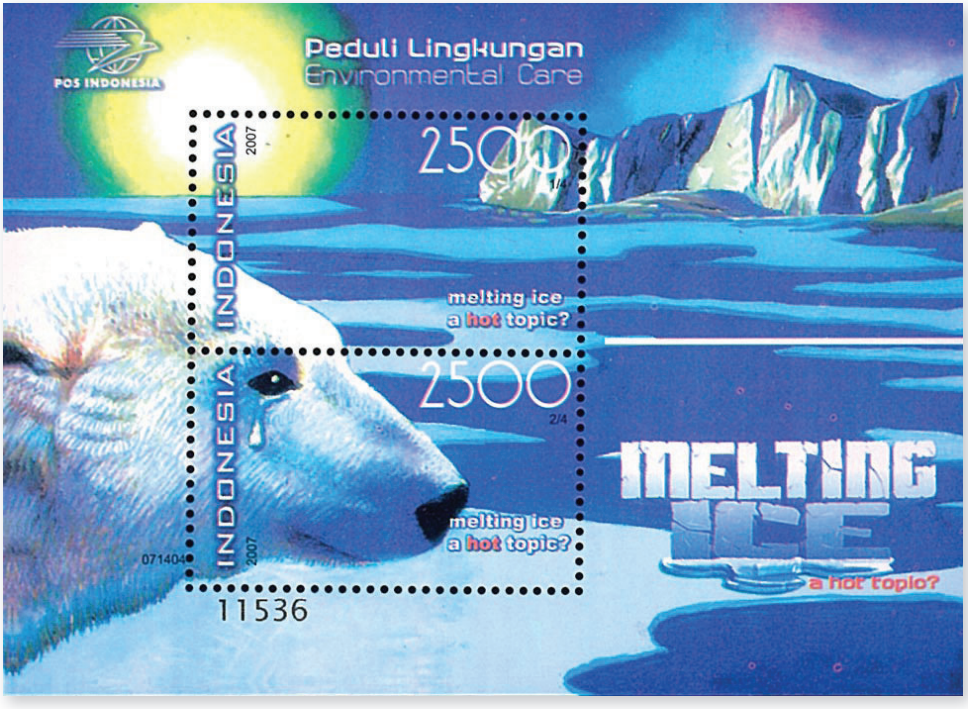


Figure 25. Earth SOS and protecting hand (Belarus ***Sc*** 210a, ***Mi*** 222-223 and label, 1997).

context of the effects of global warming in the Arctic, where temperatures have increased more than elsewhere, and the ice continues its long-term decline. A philatelic example of this visual icon is found in Figure 24.

## Conclusion

Earth is not the center of everything, as the Ancients believed. The Space Era has brought us vivid images of our planet as seen from space – a shimmering jewel of blue oceans and swirling white clouds and bright ice and green vegetation and brown deserts. What a powerful image, easily worth a thousand times a thousand words! In it, Earth seems fragile, hanging in the blackness and, as we have seen, recent environmental studies have documented some of that fragility.

In the *Bible* in Genesis 1:26, God says, *"Let us make man in our image, after our likeness; and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth"* (King James version). A strong connotation of the word "dominion" (e.g. to "dominate") seems inappropriate for this passage. Rather, it can be interpreted as referring to wise stewardship of all animals (and by extension, of Earth itself), which is not so different from Sagan's exhortation to protect and cherish the Pale Blue Dot.

Such environmental protection is symbolized in many stamps by a benevolent hand sheltering a symbolic Earth. A stamp from Belarus issued in 1997 (part of a strip of two with a label issued for a sustainable development conference that took place in Minsk in that year) contains a colorful and striking image of this type (Figure 25). This is just one more example of a postage stamp as a miniature work of art, with strong visual elements that transmit a clear message.

As already mentioned, there have been some notable successes in the area of environmental protection: The problems of acid rain and atmospheric ozone


depletion have been mitigated through national and international action. Global warming and climate change is a thornier issue, and progress has been halting as the international community searches for the right balance between the economy and the environment.

Earth's ongoing need for wise stewardship of the environment is symbolized in the other stamp in the Belarus strip (Figure 25). It shows Earth with some clouds forming the signal "SOS," an internationally-recognized symbol that is related to written language (SOS, Save Our Souls in popular usage, has a meaning similar to "Mayday," from the French "*m'aidez*," "help me"), but also has an aural history (in the Morse Code days, the audible SOS message, "dit-dit-dit, dah-dah-dah, dit-dit-dit," was a cry for immediate help). Those elements strengthen the impact of the visual SOS, which is presented in the context of Earth, environment and economic development. The message is concise and direct. Will humankind be able to respond to that distress signal through co-operative sustainable development designed to preserve the environment? This may be the most important question of our time.

## Acknowledgement

The authors wish to thank Peter Hoffman for providing some of the images and catalog numbers included in this article.

## Further reading

The authors have researched and written extensively about weather and climate and un-manned satellites on stamps and other philatelic items. Most of the images contained in this article were drawn from our websites: ***http://rammb.cira.colostate.edu/dev/hillger/weather.htm*** and ***http://rammb.cira.colostate.edu/dev/hillger/satellites.htm***

A complete list of our philatelic publications, including electronic reproductions, is found at ***http://rammb.cira.colostate.edu/dev/hillger/stamp-articles.htm***

Interested readers are invited to consult the previously mentioned online material. Email correspondence is welcomed, using the addresses included with this article.

An ATA handbook by the authors, *Space Weather - A Philatelic Journey*, is available in the ATA store on the website ***www.americantopical.org***