Good morning. Thank you for coming to see my session.

When I first made a presentation at the IBHA conference 4 years ago, there's only one audience. Today, I'm so glad that more people come to see my talk. So, again, thank you very much for coming here.

My name is Nobuo Tsujimura. I've been a hub of Big History movements in Japan for years.

Now I'm also president of the ABHA: the Asian Big History Association. Today from 4 PM, the ABHA holds the first historic panel at B026. Please come to see it too.

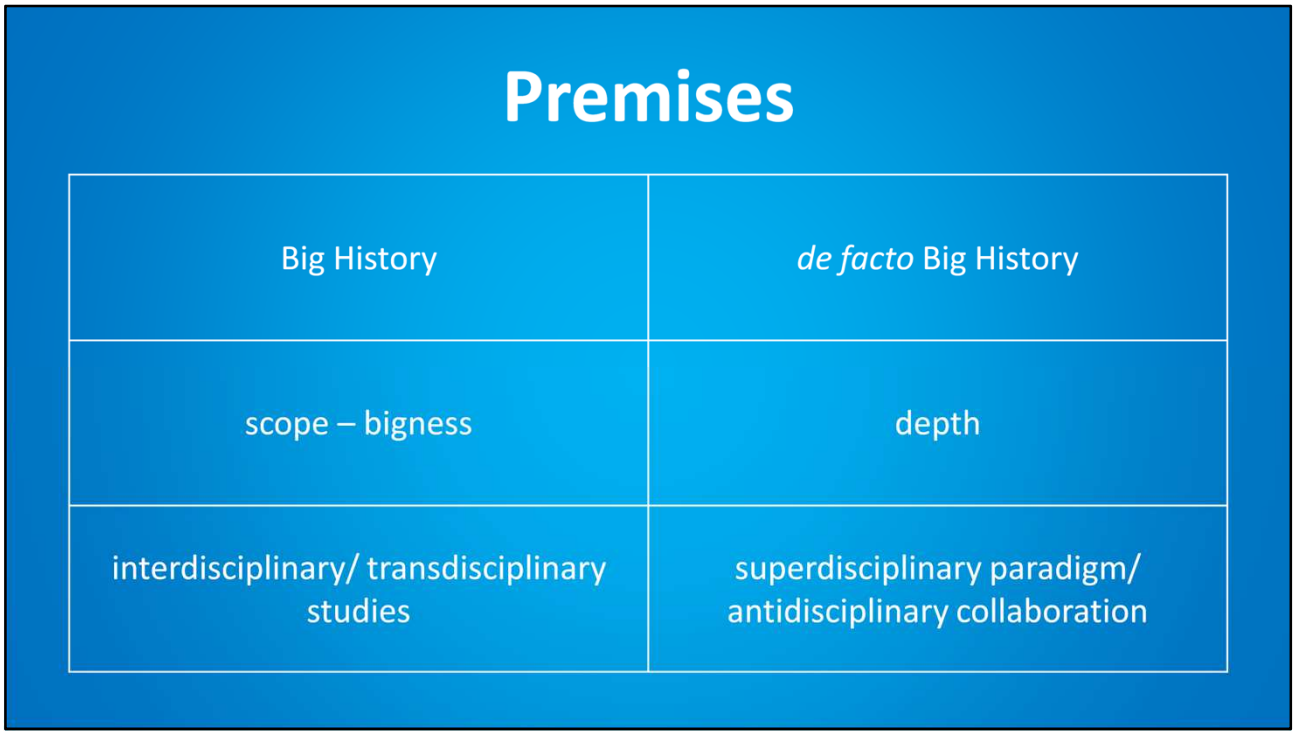
Anyway, from now, I want to report the present state of Big History in Japan.

My talk mainly consists of two parts,
First, I introduce some of BH-like ideas in Japan.
Second, I overview the recent history of BH in Japan.
And lastly, I talk about the future challenges.

First of all, I pick up some of BH-like ideas in Japan.

This year is the 50th anniversary of this famous Earthrise photo. Seeing the Earth from space is a special experience for humans. But, geophysicist Matsui says that to see something differs from to understand a meaning of something. To realize the meaning of what one saw, it sometimes takes a long time.

From now, I'd like to introduce three systems of knowledge integrated by three persons, who tried to understand us on Earth seen from space for decades.



But let us think about a little bit of premises before that.

To trace back the origins and formations of Big History around the world, we need to pay attention to *de facto* Big History. There are many persons, who don't know about David Christian or Fred Spier or their writings but have done similar studies independently. They are *de facto* big historians.

Then, what is Big History? Is it enough if one's study deals with whole range or scope of time and space? In other words, to be regarded BH, is it enough to be just big?

I don't think so. There are some boring books in Japanese even though they draw a history from the beginning of the universe to the present. Whereas there are inspirational writings that provides deep insights to think about a big history even though they don't deal with the whole range of time and space. We need not only bigness but also depth of thoughts.

Lastly, is BH just interdisciplinary or transdisciplinary studies? Barry Rodrigue argues that BH is a superdisciplinary paradigm to make actions for a better society, that is, beyond just academic studies. And director of the MIT Media Lab, Joi Ito argues the importance of antidisciplinarity, which means collaborations with non-academic specialists including designers and artists beyond academic specialties.

In my understanding, BH is part of a great transformation of our worldview and reorganizing relations among everything.

Such transformation in a broad sense has occurred in every realm of the world. And therefore, there are so many persons we can collaborate with. To do that, it is better for us not to confine BH in a too narrow definition.

So, today, I don't care about strict definition of BH. Instead, I include both comprehensive frameworks of studies and attractive ideas approaching the essence of the cosmos and humanity as well as artistic expressions of a cosmic sense.

My stance is to gather all forms of expressions with a cosmic sense, perspective and insight. I call it the cosmic feast.

Geocosmology

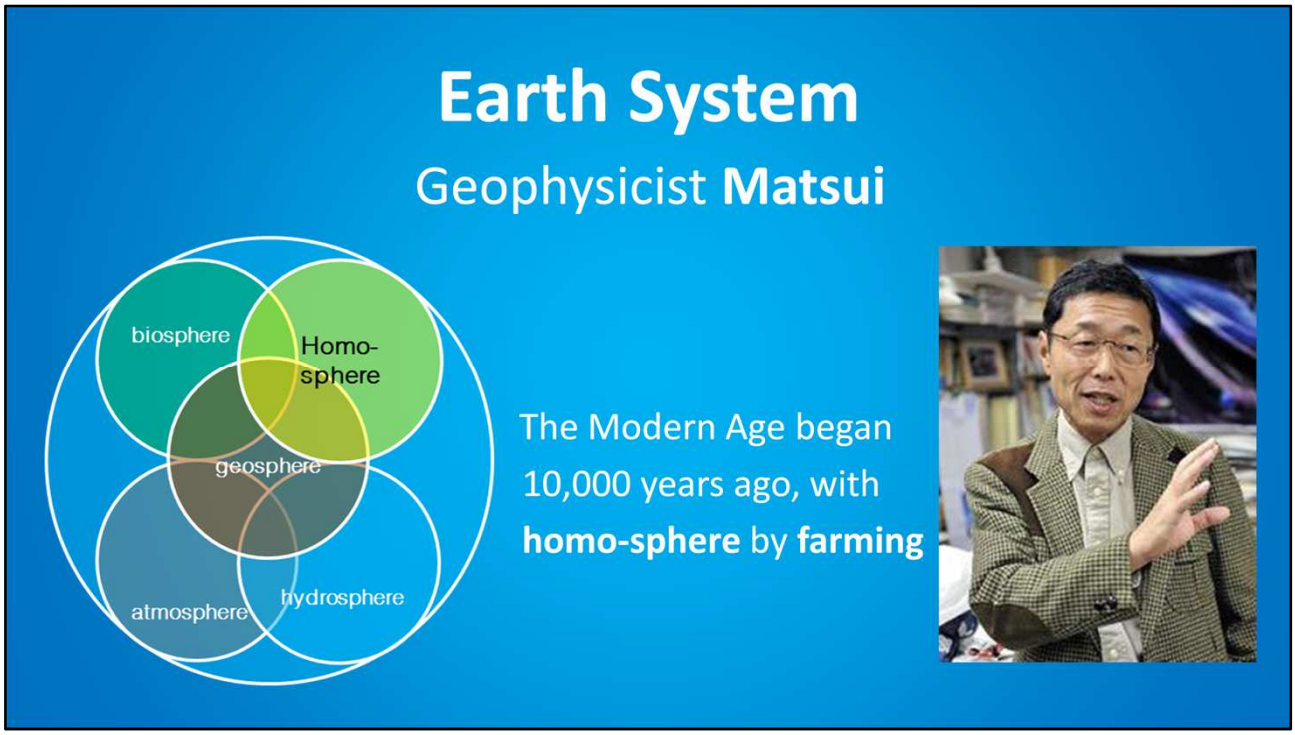
Geophysicist **Matsui**

- Science is about reading ancient texts of nature
- A history is about differentiation with cooling
- The Earth is a system

Let's get back to the first topic.

Geophysicist Takafumi Matsui has sought for the meaning of the Earth photos taken from space and reached his own system of knowledge called Geocosmology.

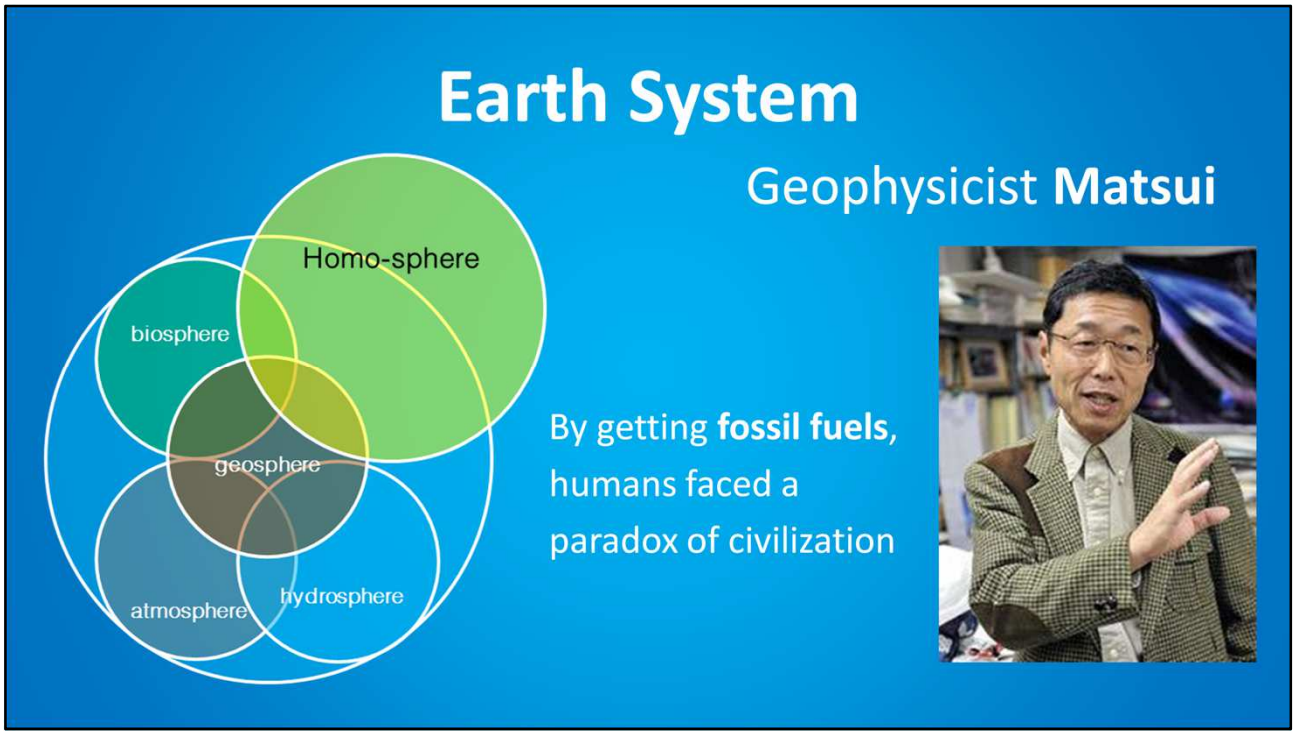
Matsui says science is about reading ancient texts of nature of 13.7 billion years old. And as a result of reading the texts of nature, he found out that a history of the universe or the Earth is about differentiation with cooling. The big bang universe cooled and then differentiated into new forms of matter s and energy. The fireball Earth also cooled and differentiated into spheres over time. The Earth is a system consisting of such differentiated spheres.



This is the Earth system. According to Matsui, Earth history underwent the five stages: a planet of a fireball; oceans; continents; life; and civilization.

Matsui argues the Modern Age began 10 thousand years ago. At that time, the homo-sphere, or human living space, differentiated from the biosphere because humans began to intentionally use energy flows of the Earth system by farming: tree-clearing; cultivation; changing flows of rivers; crossbreeding.

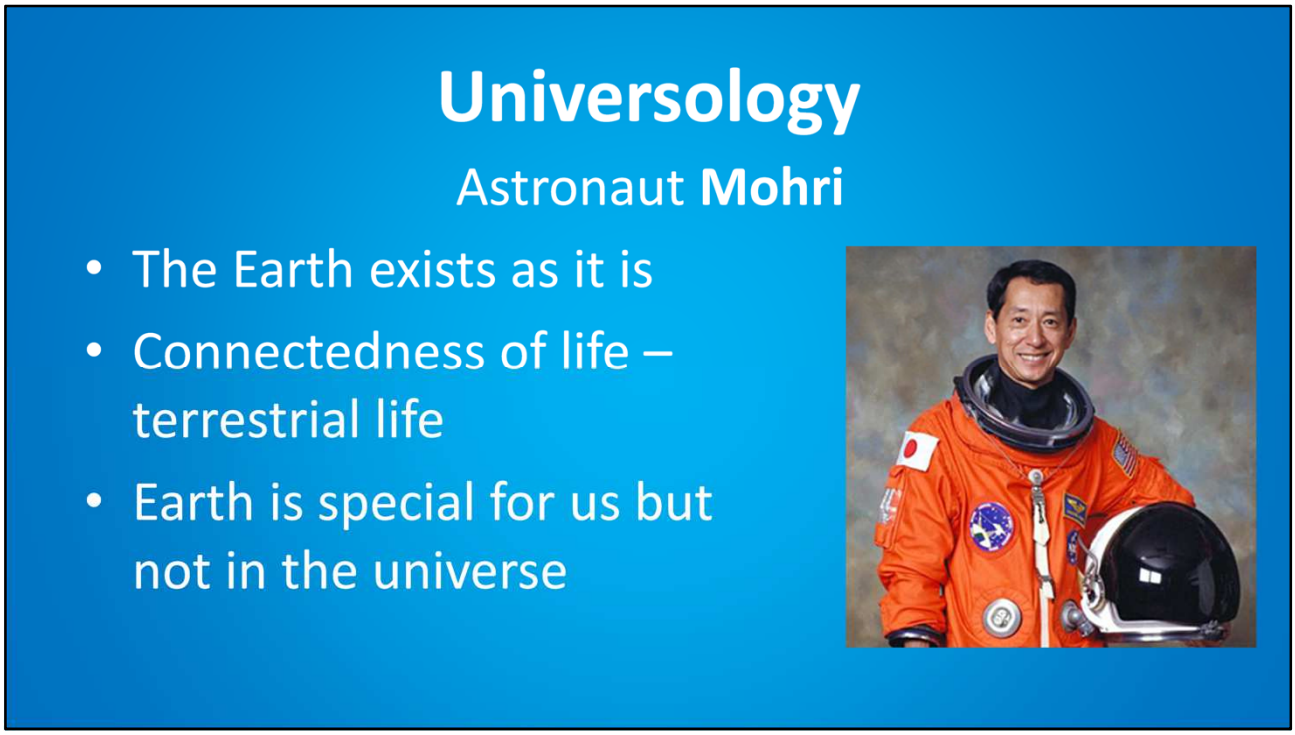
In terms of the Earth system, civilization can be defined as a way of living to make the homo-sphere, that is, to change a flow of matters and energy on earth for human interests. But at this stage, humans completely depended on the energy flows of the Earth.



Things changed when humans began to use fossil fuels after the Industrial Revolution. Humans accelerated the flows of matters and energy of the Earth system. It takes many, many millennia to form fossil fuels. So use of fossil fuels means that humans fast-forward and consume time of the Earth. (Thus, even if duration of fossil fuel civilization is short quantitatively, it has far much more impact on Earth qualitatively.)

As a result, we now face a paradox of civilization which all intellectual life in the universe has to face. To reach a level of understanding a history of the universe and their own planet, intellectual life needs to develop technoscience by fossil fuel civilization. Yet, when they reach that stage, their increasing force undermines their foundation of life.

To rightly understand and overcome this situation, Matsui calls for integrating all of knowledge and history and visualizing it. This is similar to our call for BH and mapping a history of the universe. The difference is that David Christian thinks collective learning divides human history from natural history, while Matsui thinks the homo-sphere divides them.



Astronaut Mamoru Mohri went into space twice in 1992 and 2000.

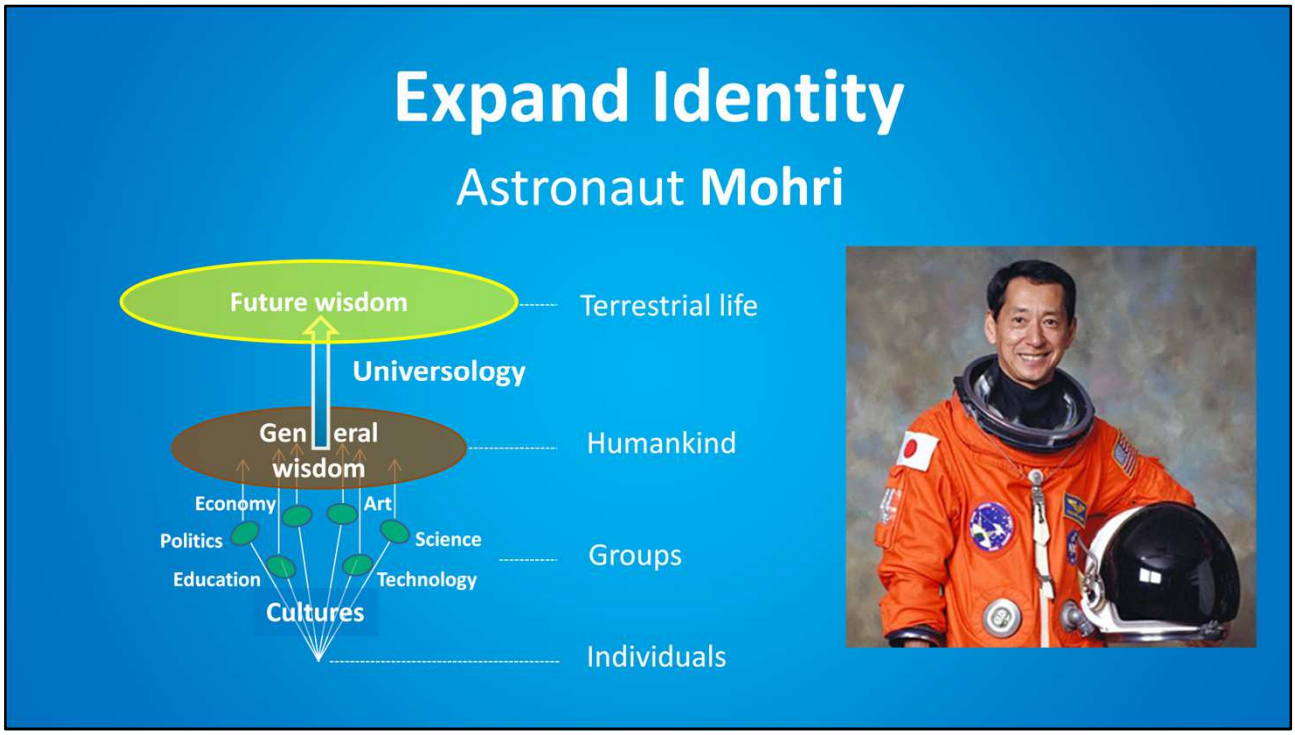
Seeing the Earth from space again and again, he felt the Earth exists as it is, the Earth exists regardless of human existence.

He felt as if he was a cell popping out from the Earth. He realized ”the Earth is also a living entity. I’m part of life as a whole on Earth, I’m a terrestrial life connected with all living organisms. As some living organisms moved from seas onto lands, I went to space on the behalf of life.”

At the same time, he got conviction that the Earth is special for us, but in the universe there are many planets like earth.

Yet for humans, Earth is only habitable home. He began to think that the purpose of space exploration is not to search for possibilities to migrate from the Earth to other planets but to get wisdom to survive on this only home planet.

He calls such wisdom as Universology.



Mohri says we need to integrate all of the cultures including science and art. That's general wisdom of humankind. Such integration is also a process of expanding identity from groups to humankind.

However, he thinks it is not enough to survive on Earth. He argues that for human survival, humans have to obtain self-consciousness as a terrestrial life and consider not only human survival but also survival of the entire life. Such self-awareness enables human survival, as human life is supported by other living organisms and environments.

Universology enables such transition from general wisdom to the future wisdom, from humankind to terrestrial life.

Although he doesn't put weight on history of the universe, he proposes integrative system of knowledge. And BH can be included in such integration.

Universal Studies

Historian **Nakanishi**

- Integrating and engaging all the disciplines for peace
- History includes everything
- Universal Studies from the imaginary to the scientific

Historian Osamu Nakanishi's starting point is Japan's defeat in the WWII and he has emphasized a view seen from space because, seen from space, there are no national boundaries on the Earth, which shows an ultimate solution of international conflicts and wars.

He has argued that to prevent war, we have to see a reality in a right and comprehensive way. Therefore, he has argued that we need to integrate and engage all the disciplines for peace.

Especially, he values history, because history includes not only politics but also economy, culture and environment. Thus history includes everything.

Later he came to know about BH and now reaches his own system of knowledge: Universal Studies.

As an historian, he respects all the past knowledge because it was wisdom by which humans in each era and each region tried to survive. They were a kind of universal studies at that time and now it develops in a scientific way. He calls this process development of Universal Studies from the imaginary to the scientific after Friedrich Engles' Socialism: Utopian and Scientific.

Cosmonization & Globalization

Historian **Nakanishi**

	C	G
The cosmos emerged and expanded		
Humans emerged and spread on Earth	1	1
Columbus reached Americas in 1492		2
USSR launched Sputnik in 1957	2	3

Nakanishi periodizes universal history by cosmonization and globalization.

Cosmonization is his own tern that means firstly emergence and expansion of the cosmos and the Earth and secondly emergence and expansion of human life zone in the cosmos. Alike, in his usage, globalization means emergence and expansion of human life zone on the Earth.

The first period of cosmonization began when the cosmos emerged and began to expand.

The first period of globalization began when humans emerged and began to spread over all parts on the Earth.

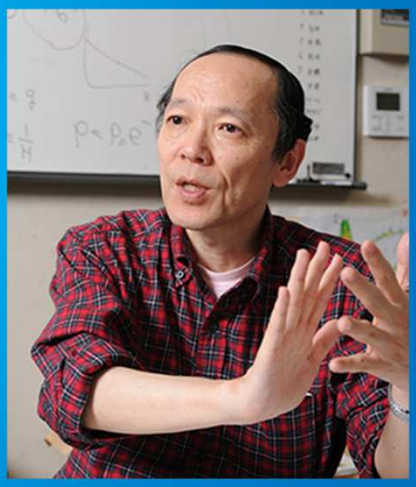
The second period of globalization began when Columbus reached Americas, beginning the unification of humans who had spread all over the Earth.

The second period of cosmonization and the third period of globalization began when the Soviet Union launched a satellite Sputnik for the first time in history. That can be seen a starting point for humans to expand their life zone in the cosmos and unify space.

5 Major Events of Cosmography

Astronomer **Fukue**

Epoch	Time	Event
1	0	Beginning of the universe
2	400 thousand years	Clear-up of the universe
3	200 million years	Reionization of the universe
4	3 billion years	Formation of galaxies
5	9 billion years 10 billion years	Formation of the solar system Emergence of life



Next, in Japan, there are also some kinds of periodization like 8 thresholds of increasing complexity. Today I want to cover two of them.

First, astronomer Jun Fukue chooses 5 major events in each of cosmic and earth history.

The biggest event is the beginning of the universe.

400 thousand years later, the fireball universe cooled until 3000 kelvin and then protons and electrons of ionized hydrogen combined with each other to make neutral hydrogen atoms. Until then, electrons were spinning around at high speed that disabled light to go straight. But now electrons were captured by protons, so light could go straight and the foggy universe became clear. This is called clear-up of the universe.

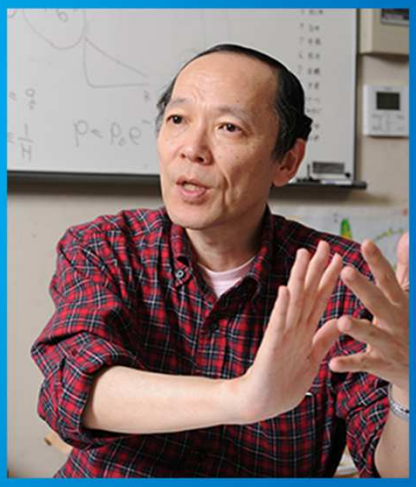
However, 200 million years after the beginning, first objects might form and presumably their ultraviolet rays reionized the universe.

In terms of cosmography, Fukue sees the formation of the solar system, the Earth and emergence of life as cause-and-effect sequence events.

5 Major Events of Terragraphy

Astronomer **Fukue**

Epoch	Time	Event
1	4.6 billion years ago	Beginning of the Earth
2	3.8 billion years ago	Emergence of life
3	2.7 billion years ago	The first photosynthetic organisms
4	2 billion years ago	Increase of partial pressure of oxygen
5	65 million years ago	Extinction of dinosaurs and diversification of mammals



Terragraphy is a term coined by Fukue, which means earth history, paring up with cosmography.

Seeing his 5 thresholds, it is clear he gives weight to emergence of cyanobacteria producing oxygen. This is because photosynthesis means that living organisms began to intervene in earth environment and that co-evolution between the Earth and life started.

(He brackets all of these events as 10 major events of Cosmography and Terragraphy, but as you notice, since some of events are overlapped, a total number of the events is less than 10.)

9 Evolutions

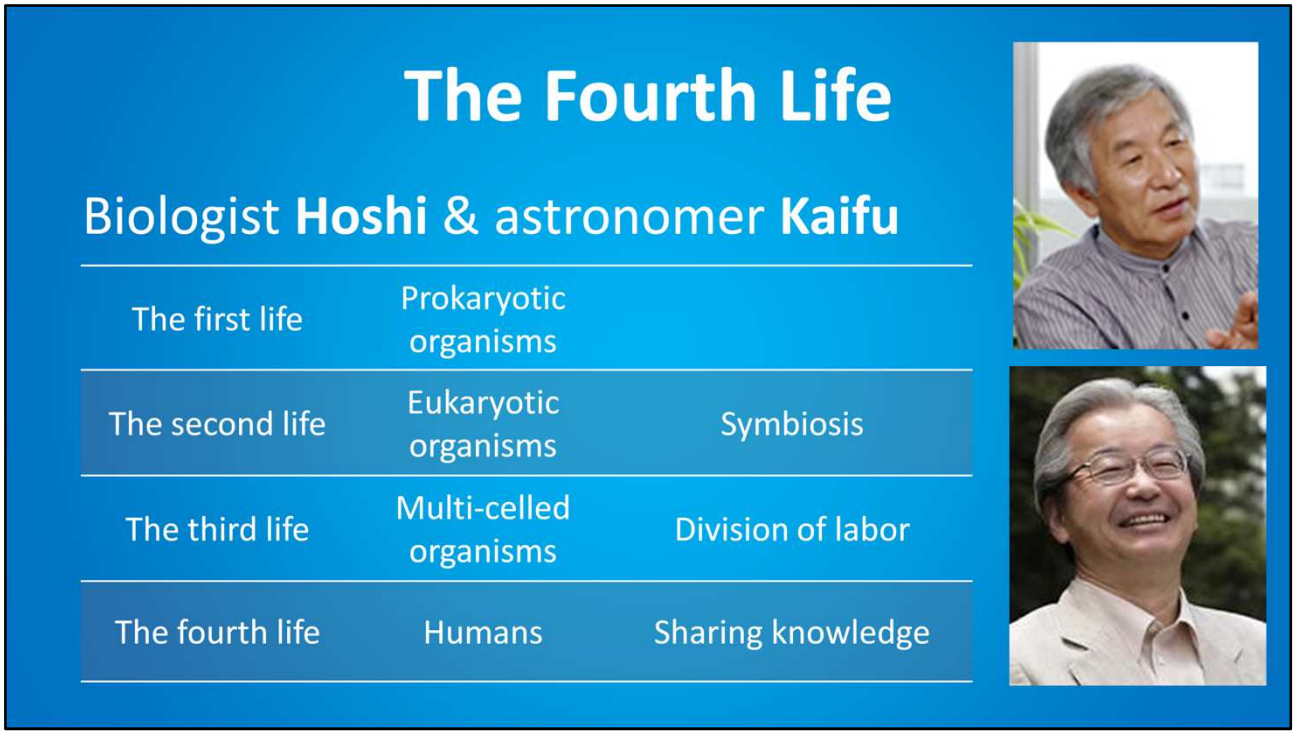
Physicist **Wada**

1	14 billion years ago	Evolution of time-space
2	380 thousand years ABB	Evolution of particles
3	A few hundred million years ABB	Evolution of objects and elements
4	4.6 billion years ago	Evolution of the solar system
5		Evolution of the Earth
6	4 billion years ago	Evolution of organisms
7		Evolution of single-celled organisms
8	550 million years ago	Evolution of higher organisms
9	5 million years ago	Evolution of hominines

Second, physicist Sumio Wada sees cosmic history as overlapping of 9 evolutions: Evolution of time-space; particles; objects and elements; the solar system; the Earth; then evolution from non-living organisms to living organisms; single-celled organisms; higher organisms; and finally hominines.

ABB on the table means after the big bang.

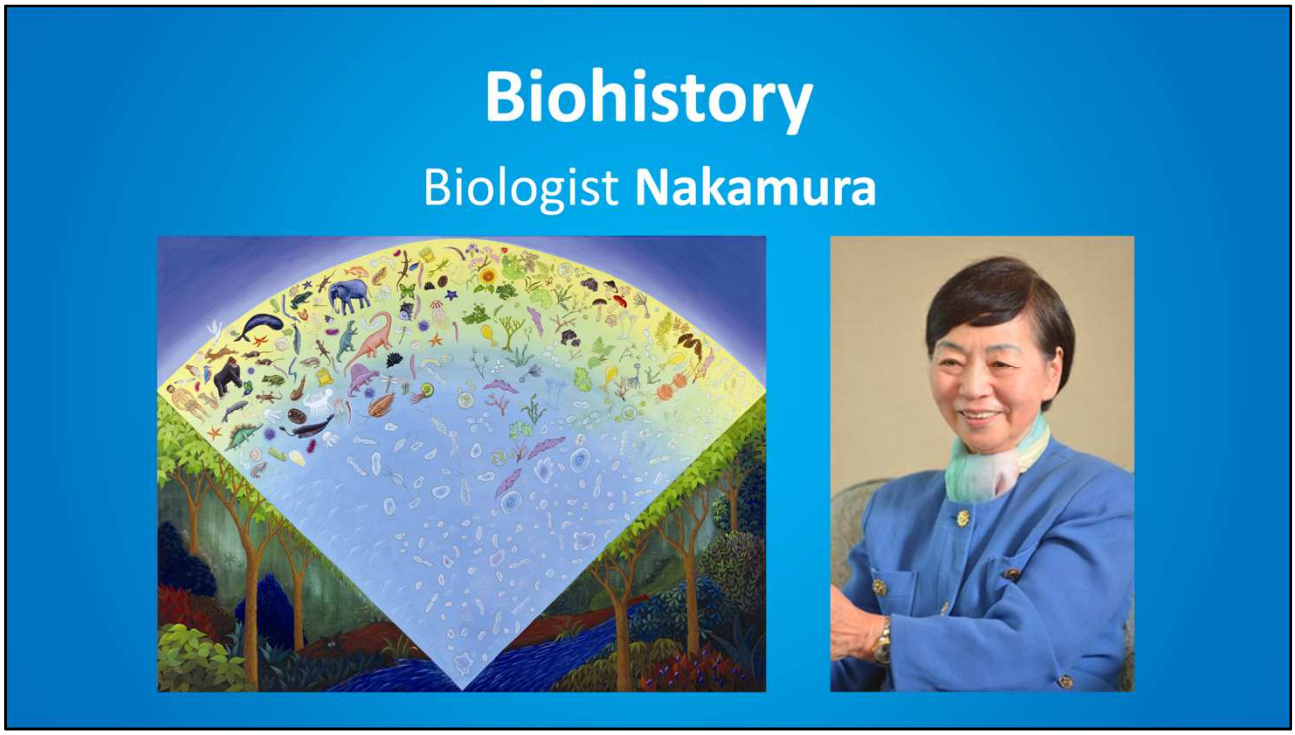
Although Wada draws a history until emergence of civilization, he doesn't accept the need to add another threshold after divergence between hominines and chimpanzees. But if we add new thresholds to this, a total number of thresholds reached over 10. It is too many to grasp a story!



Next, we can find a similar idea to collective learning.

Biologist Motonori Hoshi and astronomer Norio Kaifu argue that Homo sapiens is the fourth type of life, for humans can share knowledge beyond time and space.

Yet, Hoshi refused an idea that humans reach the highest stage of evolution, as evolution has no directions. He writes that since human sense and desires evolved in local places, humans are originally bad at global thinking, but whether humans are apt for the name of Sapiens depends on whether they can cope with global issues (especially population explosion) or not.



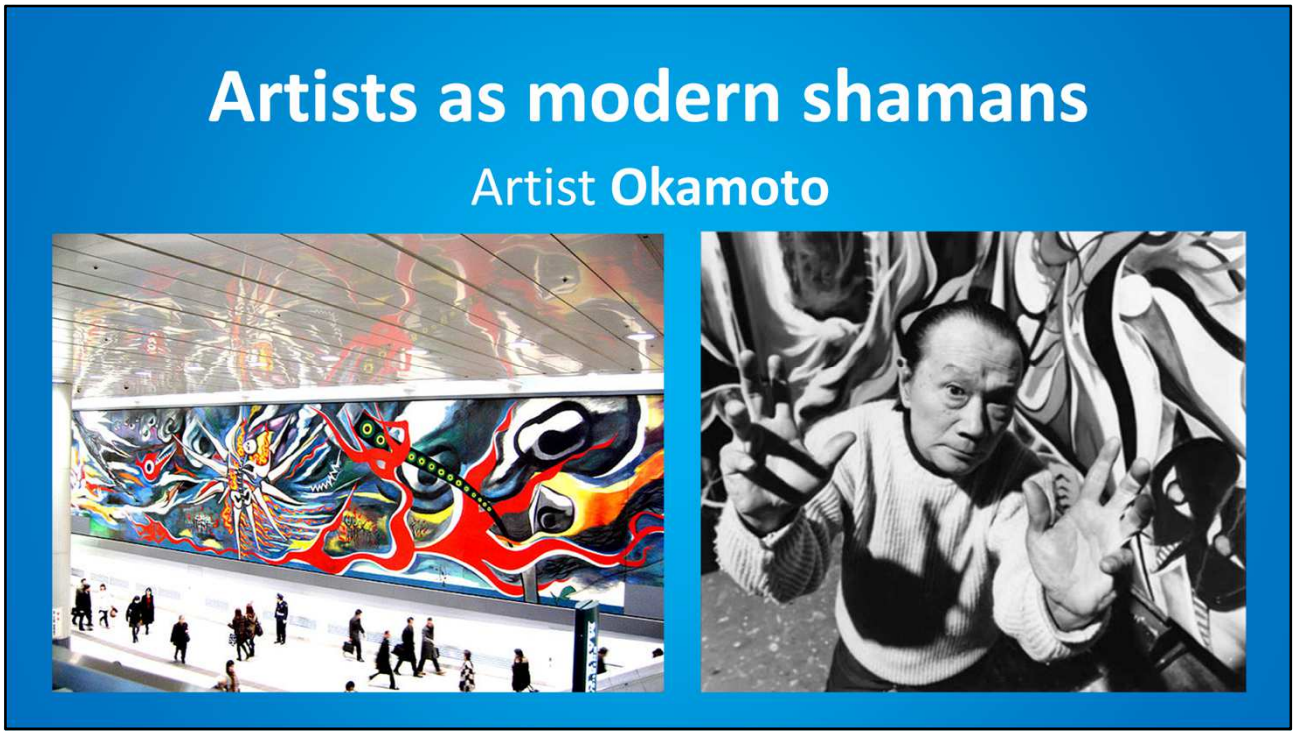
Next, as David Christian called BH a modern creation myth, In Japan too, there are those who argues a similar thing but in different ways.

First, biologist Keiko Nakamura concerns that today there is no story everyone can share like ancient myths and argues we need a new myth based on life. She calls it Biohistory, that means history of life of 3.8 billion years.

She emphasizes the need of expressions to convey such a new worldview to the people. And she produced the picture on the slide with the help of a painter.

This picture visualizes history of life by a fan shape because it can express life began from the common ancestor and became diverse.

Modern species are placed at the top of fan to show all of them have a history of 3.8 billion years. Humans are placed on the far left of the top to show only humans are not at the top.



Artist Taro Okamoto argued that artists are mondern shamans. Artists shaken existing social standards and common sense by showing something chaotic, mystic, and fundamental hidden in life. They awaken us with impression and give us a feeling of fulfillment.

With this spirit, Taro expressed a fundamental life force of the universe through paintings, sculptures, installations and writings.

Once the ancient myths were not only written but also sung, danced and painted. If so, a modern myth called BH needs to be expressed in various ways: not only writings but also singing, dancing, painting, and so many other forms. I call such diverse manifestations of new visions as the cosmic feast.

(Myth of Tomorrow – this picture shows a tragedy that a Japanese fishers suffered from radiation due to nuclear bomb test of the United States in 1954. At the same time, the strong shape and vivid colors represent outrage and pride of humanity. That shows resilience to overcome the tragedy for better tomorrow.)

Second of all, I give you the briefest view of BH in recent Japan. Although it seems that there have been BH like ideas in Japan since the early modern times, I want to focus on last three decades, because today's theme is the present state of BH in Japan.

Speaking of education, BH like course appeared in Japan at least until 1990s.

In 1994, astronomer Jun Fukue and his colleagues (a team of astronomers, geologists, mineralogist, crystallographer and biologist) began to teach a course titled "Geoscience: A Story of the Cosmos and the Earth" at Osaka Kyoiku University. They tried to provide a dynamic history of the universe and the Earth from the birth of the universe to the formation of the sun and the Earth and the emergence of life and humankind until the future of the Earth. Therefore, it can be seen an early example of *de facto* big history course in Japan.

They integrated history of the cosmos and the Earth under geoscience, because geo-science includes astronomy, climatology, geology and mineralogy. The Earth is a point of intersection between cosmic phenomena and global phenomena. (Moreover, they argue such wide framework expand our mind so that we can accept differences and diversity in our daily life.)

Of course, there are more examples like this course, it is 2000s that more organically related movements to BH emerged.

In the 21st century, the three drivers promoted BH in Japan.

First, in 2001, historian Osamu Nakanishi founded Institute for Global and Cosmic Peace, IGCP. IGCP aims to keep peace on Earth and prevent war from expanding into space. To do that, Nakanishi proposed a new framework of integrating all the disciplines for peace named Global and Cosmic Peace.

In that year, I, Tsujimura, saw Nakanishi at Soka University in Tokyo where Nakanishi taught at that time. Influenced by Nakanishi's cosmic and historical perspective and later by David Christian's *Maps of Time*, I began to study BH.

Then in 2005, I wrote an article "A Methodological Note for Global and Cosmic History," which is the first Japanese writing referring to BH. In this article, I proposed a new framework of comprehensive history of the Earth and the cosmos named Global and Cosmic History after Nakanishi's Global and Cosmic Peace.

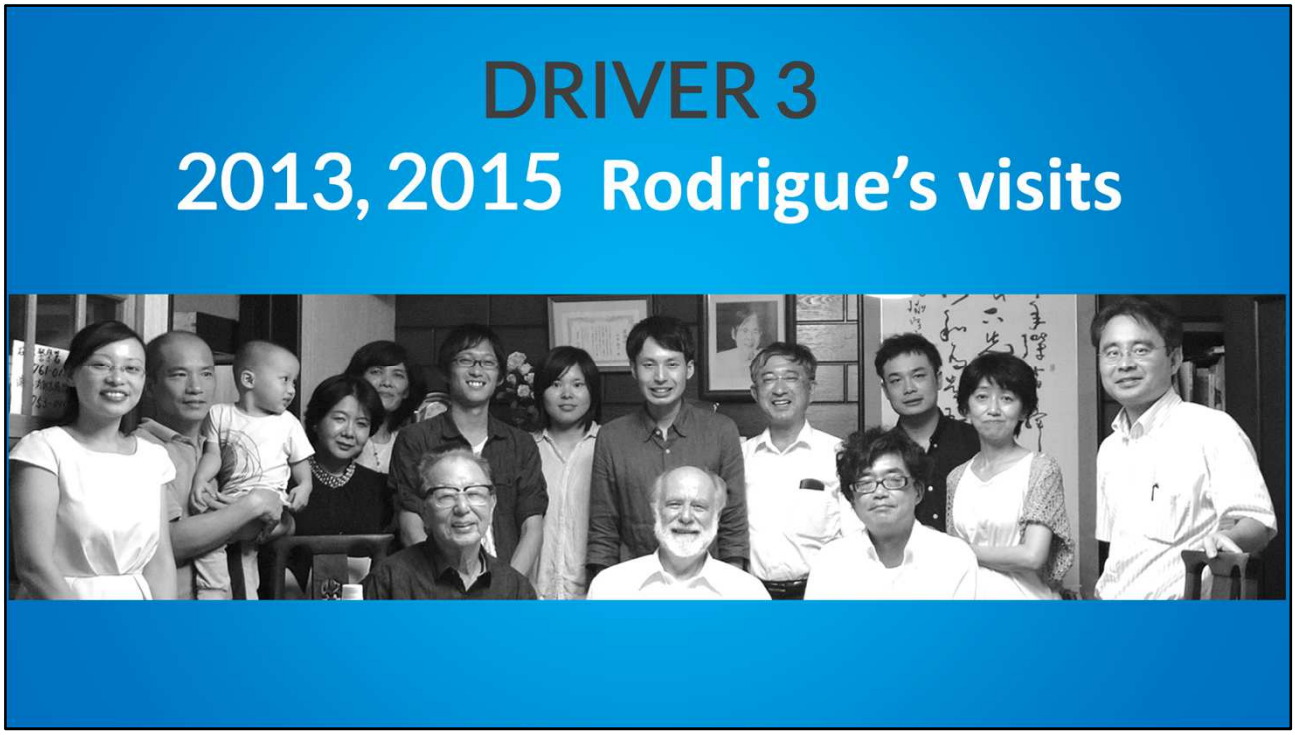
Later, our study of BH attracted Hirofumi Katayama and Barry Rodrigue. So, our study was a real starting point for recent BH movements in Japan.

As stated before, now Nakanishi studies BH under the name of Universal Studies and Tsujimura the Cosmic Feast.

Second, Christopher Lloyd and David Christian became a trigger to spread the concept of BH.

In 2012, Christopher Lloyd's *What on Earth Happened?* was translated into Japanese and became a bestseller. It is the book on the left side. Then, next year, a Japanese TV station, TV Tokyo, began to broadcast a series of TV programs based on this book. Lloyd himself delivered some lectures in Japan too.

In 2014, the Japanese national public broadcaster, NHK, broadcast David Christian's TED talk, "The history of our world in 18 minutes." Probably, this was the first time for most Japanese people to learn BH. Then, next year, a Japanese national newspaper, the Asahi Shimbun, published the interview of Christian and introduce Big History Project to Japanese readers. These were also influential.

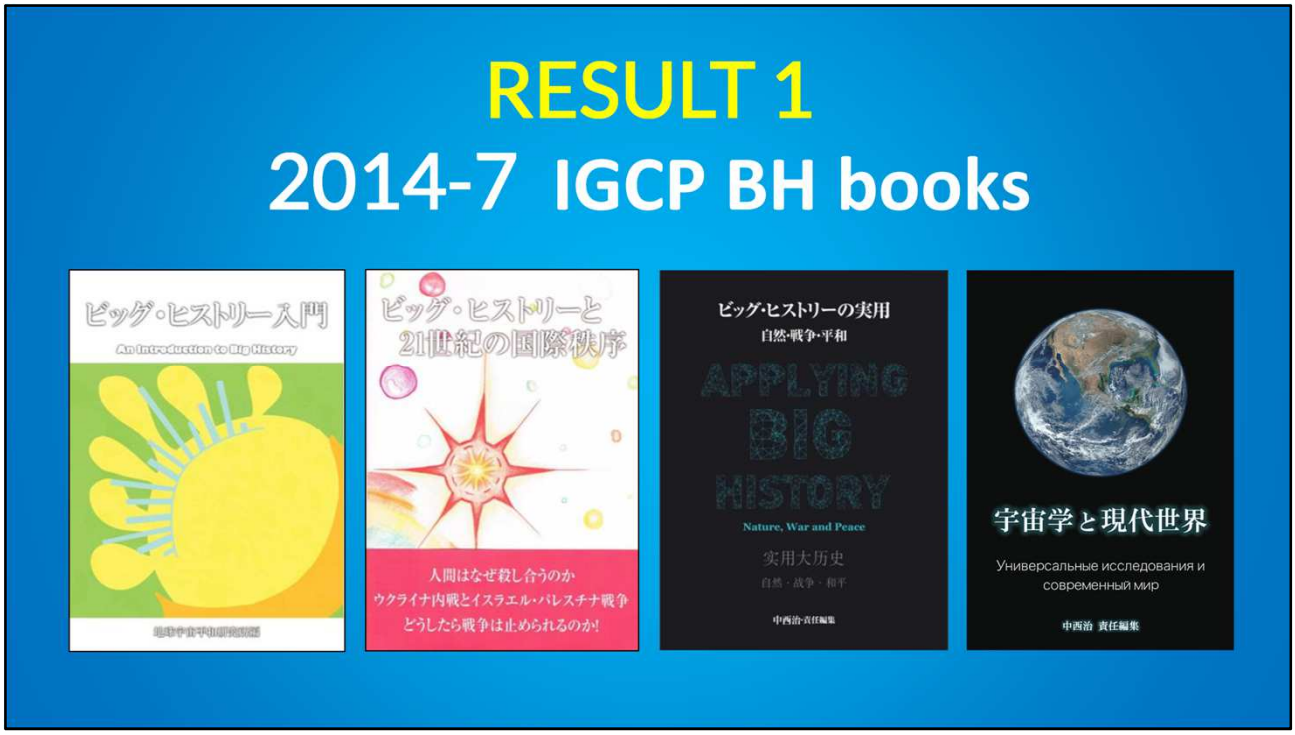


Third, as the International Coordinator of the IBHA, Barry Rodrigue visited Japan twice.

Since 2011, Rodrigue and I have contacted with each other by emails. Then in 2013, he first saw Nakanishi and me in Tokyo. He introduced Akop Nazaretyan to Nakanishi, as Nakanishi was a specialist on modern Russia. In that year, Nakanishi visited Moscow and saw Nazaretyan. In this way, the new networks formed among the IGCP, the IBHA and the Eurasian Center for Megahistory and System Forecasting.

In 2015, Rodirigue made a talk titled "The Meaning of Big History" at IGCP in Yokohama. This is the picture of that event.

Rodrigue's visits inspired and moved especially Hirofumi Katayama and me. For Katayama, Rodrigue had an actual stance to apply BH to a global reality, leaving just abstract thinking.. For me, Rodrigue had a wider conception of BH that includes artworks, many forms of expressions and social activism. This was a starting point of the J.F. Oberlin University Big History Project.



These three drivers produced four results.

First, IGCP published a series of BH books. From left to right: *An Introduction to Big History*; *Big History and the 21st Century's International Order; Applying Big History*; *Universal Studies and the Modern World*.

Japanese, Chinese, American and Russian authors, including Barry Rodrigue, Lowell Gustafson and Akop Nazaretyan, contributed articles to these books. I wrote an article, translated most of English articles, edited and designed most of these books and wrote short summaries of the first and the third books in *Origins*. Those can be seen the first Japanese productions written by those who learnt BH.

RESULT 2

2016 J.F. Oberlin University

- "Understanding Nature (Big History)"
- Economist **Katayama** and astronomer **Miyawaki**
- Oberlin Big History Project (OBHP) with **Tsujimura**
- Website: http://obhp.org/

Second, inspired by Rodrigue, economist Hirofumi Katayama began the first ever big history course titled "Understanding Nature (Big History)" in 2016, with astronomer Ryosuke Miyawaki.

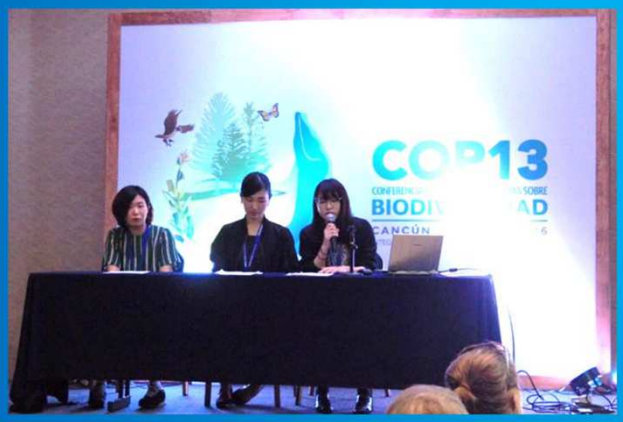
I have made advices for this course and run a website for Oberlin Big History Project. You can check our syllabus on this URL.

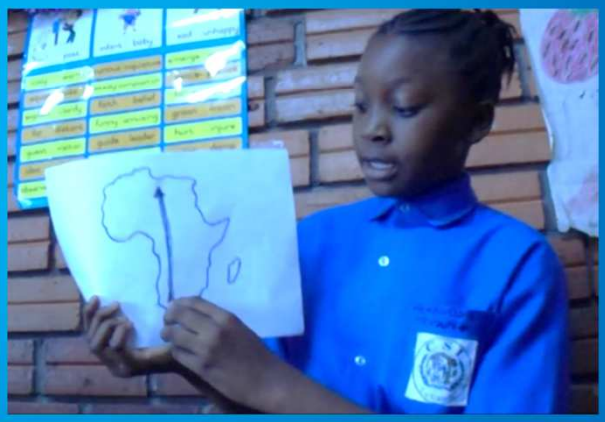
(The characteristics of our course are firstly various guest lecturers including an animation creator and secondly international communications.)

RESULT 2

2016-8 OBHP global actions

Mexico, India and Cameroon





OBHP's slogan is "Think Cosmically, Act Globally." With BH perspectives, we made global actions.

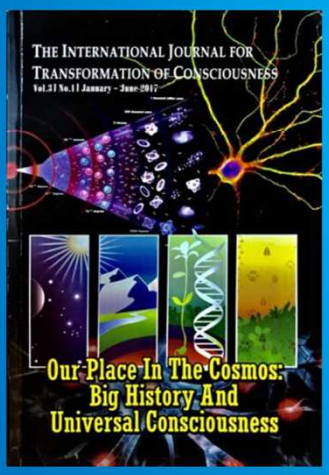
First, in 2016, Oberlin students visited Mexico and hold a big history event to think about biodiversity from BH perspectives along with the COP13 of the Convention on Biological Diversity.

Second, in 2017, Oberlin students made online discussions with Rodrigue's students at Symbiosis International University in India and, in this year, Katayama and I attended a BH conference at Symbiosis on behalf of OBHP.

Third, from 2017-18, OBHP hold a competition of BH picture stories to promote BH education in Cameroon, Africa. (13 teams from 7 schools applied for this Competition.) This led to the formation of the African Big History Association, AFBHA. AFBHA have a YouTube channel, so you can see their videos on YouTube.

RESULT 2

2017 OBHP BH articles



Moreover, OBHP produced BH articles last year.

Katayama and I wrote a co-authored article for the special issue of *International Journal of Transformation of Consciousness* published in India on the left side.

In the middle, you can see a special issue of a Japanese techno music magazine. Katayama and I wrote a BH article to spread BH among the general public.

A book on the right side is a collection of papers we wrote for the COP13 in Mexico as already explained. You can download this on the OBHP website.

RESULT 3

2017 Tohoku University

- "Big History: Connecting Natural Science to Society"
- Geologist **Nakamura** and his colleagues

The third result is that geologist Norihiro Nakamura started the second BH course in Japan at Tohoku University, a top-ranked Japanese university especially in natural science.

Nakamura origanally taught earth history at Tohoku and then got cooperation of his colleagues, he expanded his course into BH. Now the course, "Big History: Connecting Natural Science to Society" is taught by a team of astrobiologist, biologist, geologist and archaeologist.

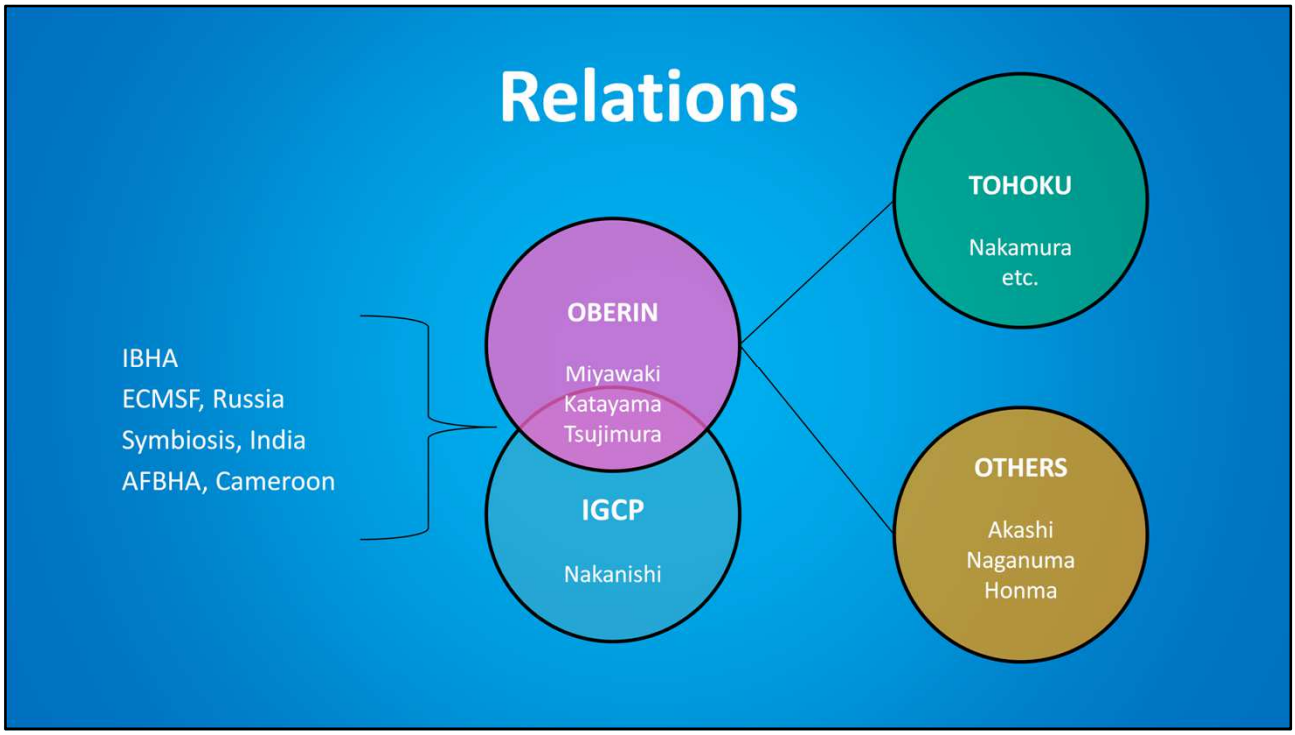
Fourth, until now, four BH books has been translated into Japanese.

From left to right: David Christian's *This Fleeting World*; *Big History: Between Nothing and Everything*; Macquarie University BH Institute's pictorial book *Big History*; and Walter Alvarez's *A Most Improbable Journey.*

Among them, the Japanese edition of *Big History: Between Nothing and Everything* was sold well. But unfortunately, right after the publication, the Japanese edition of Yuval Noah Harari's *Sapiens* became a best-seller here in Japan too. So *Sapiens* overwhelmed *Between Nothing and Everything*.

But *Between Nothing and Everything* produced passionate promotion of BH.

The publisher of the Japanese edition, Akashi Shoten, biologist Naganuma and chemist Honma collaborated with each other and they held the campaigns, talk shows, book fairs and science cafes.



This is the simplified diagram of major big historians in Japan.

Katayama and Tsujimura belong to both IGCP and Oberlin BH Project. And IGCP and Oberlin have international network with IBHA, Eurasian Center for Megahistory and System forecasting in Russia, Symbiosis International University in India and African BH Association based in Cameroon.

There are 2 universities in Japan that provides a BH course: Oberlin and Tohoku.

And Oberlin has networks with both Tohoku University and other key players.

Thet's the present state.

Lastly, I would like to tell our future challenges.

First, I will continue a further research on the origin and formation of BH in Japan. As of now, I feel that the further we trace back the pioneers, the more interesting they are. One of the reasons is that the past Japanese fused Chinese cosmology, Western one, and Japanese one into one. Such mixture produced an attractive person like Minakata Kumagusu. So I will report the outcome at the 2020 IBHA conference.

Second, I want to network and collaborate with more people home and abroad. At moment, the most sympathetic person to our project is animation director Shoji Kaawamori, who argues animation is a modern form of telling a myth.

Third, I want to spread BH education especially among universities. To do that, I and Katayama pkan to hold a BH symposium at Oberlin next year.

Fourth, I want to make introductory works to BH especially for Japanese people. Such introductory works Japanese can read in Japanese is quite Insufficient. That situation should be changed.

These are the present state of BH in Japan. Thank you for attention.