

Anthropogenic Markers

Historical and Material Contexts
of a Twentieth-Century Transition
in Earthly Matters

International Workshop
September 22-24, 2021
° Online/Berlin



MAX PLANCK INSTITUTE
FOR THE HISTORY OF SCIENCE

Anthropocene
Working Group

HKW Haus der Kulturen
der Welt

The special session on „Nuclear Anthropocene“ is supported by:

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GENERAL OUTLINE

The Project

From 2020 to 2022, the Anthropocene Working Group (AWG) is coordinating a geological investigation to identify key anthropogenic signatures for the onset of a new human-led epoch: the Anthropocene. As the group assesses the material evidence for a globally synchronous and lasting record of human activities on physical, chemical, and biological processes of the Earth system, it reconnects the debate on the Anthropocene to its actual chronostratigraphic meaning. Through the identification and dating of the lower stratigraphic boundary—the so-called Global Boundary Stratotype Section and Point (GSSP)—traceable in various marine and terrestrial deposits the group will pragmatically consider a formal beginning of the Anthropocene, placing this new human-made epoch at the current end of a geologic timescale that encompasses 4.5 billion years of geological evolution.

The anthropogenic markers investigated by the AWG are varied and multiple. They include novel materials such as plastics or black carbon from combustion processes, organic pollutants, biotic signals such as neobiota or changing pollen types, the changing compositions of carbon and nitrogen isotopes, as well as the release of artificial radiogenic substances to the global environment. Across the board, these markers portray the dramatic changes that have taken place particularly around the middle of the twentieth century. They represent a record of the multiple impacts that modern industrial societies have begun to have on the atmosphere, hydrosphere, and cryosphere, signaling, amongst other consequences the advent of a new era of species migration and widespread extinction, the measurable alteration of biogeochemical cycles, and the emergence of anthropogenic radionuclides resulting from atmospheric nuclear weapons testing.

Against this backdrop, the two-year “Anthropogenic Markers” project invites a variety of scholars from the fields of history, geology and geochemistry, science studies, anthropology and the arts to explore the evidence making and evidence traces that verify a mid-twentieth century start of the Anthropocene, specifically addressing the material histories of anthropogenic residues in human-impacted environments. The project sets up a conversation across different disciplines and methods in which geological and historical perspectives can inform each other through the lens of particular matters and epistemic settings. Attention will be paid to issues such as the material and conceptual histories of anthrobiogeochemical cycles, anthropogenic pressures on the biosphere, particle and chemical signatures of combustion processes, and the connection between the nuclear age and the Anthropocene.

The immediate aim of the project is the joint production of thematic online dossiers that cover six of these chosen subjects and which help to historically contextualize the different Anthropocene markers under investigation by the AWG. The dossiers, to be issued as a special publication on the anthropocene-curriculum.org platform in January 2022, do not attempt to systematically organize all markers according to their properties, but instead allow for different perspectives, framings, and approaches to be taken. Each dossier will open with an introductory essay, authored by a group of several members of the AWG and their associated GSSP project teams from various laboratories across the world. These openers detail the dossier subject from a stratigraphic perspective with a special focus on scientific content and methods. The dossiers’ main contents then consist of a curated collection of individual and joint contributions developed and (co-)authored by participants of the project. Their composition can take different contents and formats: (multimedia) essays, videos, artistic contributions, transcripts of joint conversations, annotated collections of sources, etc.

The publication of the dossiers will launch a year of events, exhibitions, and programs at the HKW that reevaluate the Anthropocene condition for broader publics alongside the finalization of the AWG’s investigation, and their formal recommendation for the Anthropocene GSSP.

The Workshop

The workshop presents an important intermediate step in the production process of the six dossiers. Already in April 2021 the opening essays of the AWG were made available to all project participants to stimulate ideas and thoughts for the varied directions the dossier contributions might take, including possible cross-collaborations between the participating geologists, historians, artists, and scholars. All participants (except the AWG members) will submit a first draft or sketch of their contribution by August 1 to be circulated among the group. The workshop will then present an opportunity to collectively review, discuss, and further develop the cross-integrated contents of the dossiers based on the drafts/sketches received.

The workshop starts with a full day devoted to the AWG's discussion on the progress made in the search for suitable GSSP candidates. The following two days then focus on the future contributions to the dossiers. Each participant will have the opportunity to briefly summarize the topic and format of his/her contribution (7 mins). A short commentary by another workshop participant will then give a first response (5 mins) and thereby kickstart the general discussion (15 mins). The Nuclear Anthropocene session organized by Soraya Boudia and Maria Rentetzi, has a slightly different format with two round tables and a subsequent artist presentation. The aim of these formats is to ensure a lively discussion based on the precirculated drafts. As attendance of the workshop will be both physical and remote, a carefully coordinated discussion is key to its success.

Organization

The "Anthropogenic Markers" project is a direct contribution of the Max Planck Institute for the History of Science (MPIWG) to the ongoing collaboration between the AWG, the Haus der Kulturen der Welt (HKW), and the MPIWG that together coordinate, fund, and contextualize the extensive endeavour of finding and defining the Anthropocene GSSP. The project is conceptualized and organized by Giulia Rispoli and Christoph Rosol from the MPIWG research group "Anthropocene Formations."

The "Anthropogenic Markers" workshop taking place midway through this project is funded by the MPIWG and the HKW. The special session on the „Nuclear Anthropocene" is supported by the research program "Nuclear Governance after Hiroshima funded by Face Foundation - Partner University Fund (PUF)," convened by Soraya Boudia (Université de Paris), Bernadette Bensaude-Vincent (Université Paris 1 Panthéon-Sorbonne), and Kyoko Sato (Stanford University), as well as the ERC Consolidator Grant "Living with Radiation: The Role of the International Atomic Energy in the History of Radiation Protection (HRP-IAEA)," lead by Maria Rentetzi (Friedrich-Alexander Universität Erlangen-Nuremberg, MPIWG).

PRELIMINARY PROGRAM

Wednesday, September 22, 2021

– INTERNAL –

Time (Berlin) <i>*Check your local time zone*</i>	Presentations from candidate GSSP locations and project members
8:00 am	Check in at HKW
8:30 – 9:00 am	Welcome and Introduction Bernd Scherer & Katrin Klingan & Christoph Rosol (HKW, MPIWG) Simon Turner & Colin Waters (AWG)
9:00 – 9:30 am	Flinders Reef, Australia (Jens Zinke & Australian Institute of Marine Science)
9:30 – 10:00 am	Beppu Bay, Japan (Michinobu Kuwae/Yoshiki Saito)
10:00 – 10:30 am	<i>Coffee Break</i>
10:30 – 11:00 am	Sihailongwan Maar Lake, China (Yongming Han)
11:00 – 11:30 am	Śnieżka peatland, The Sudetes, Poland (Barbara Fiałkiewicz-Kozieł)
11:30 – 12:00 am	Ernesto Cave, Italy (Andrea Borsato)
12:00 – 1:15 pm	<i>Lunch Break</i>
1:15 – 1:45 pm	East Gotland Basin, Baltic Sea (Jérôme Kaiser/ Juliana Assunção Ivar do Sul)
1:45 – 2:15 pm	Antarctic Peninsula, Antarctica (Liz Thomas)
2:15 – 2:45 pm	San Francisco Estuary, USA (Stephen Himson/Mark Williams)

2:45 – 3:05 pm	Urban stratigraphy, Vienna, Austria (Michael Wagreich)
3:05 – 3:25 pm	<i>Coffee Break</i>
3:25 – 3:55 pm	Plutonium isotope analysis of GSSP samples (Andy Cundy)
3:55 – 4:25 pm	¹⁴C analysis of GSSP samples (Irka Hajdas)
4:25 – 4:55 pm	SCP analysis of GSSP samples (Neil Rose)
4:55 – 5:25 pm	Crawford Lake, Canada (Francine McCarthy)
5:25 – 5:35 pm	<i>Coffee Break</i>
5:35 – 6:05 pm	West Flower Garden Bank Reef, USA (Kristine DeLong)
6:05 – 6:35 pm	Searsville Reservoir, California, USA (Allison Stegner/Anthony Barnosky/Liz Hadly)
6:35 – 6:50 pm	Project review and plans (Simon Turner)
6:50 – 7:10 pm	Anthropocene Review paper template (Colin Waters)
7:10 – 7:40 pm	Presentation of artistic project on GSSP-research (Giulia Bruno and Armin Linke)
7:45 pm	<i>Dinner</i>

Thursday, September 23

– OPEN TO REGISTERED PARTICIPANTS –

Time (Berlin) Discussion of contributions to the Anthropogenic Markers Dossiers
Check your local time zone

9:30 am Check in at HKW

10:00 am **Welcome and Introduction**

Giulia Rispoli, Christoph Rosol (MPIWG, HKW)
Maria Rentetzi, Soraya Boudia (HRP-IAEA, Université de Paris)

10:15 am **Session 1: Combustion**

Chair: Christoph Rosol

Nigel Clark

Anthropogenic Fire as the Hinge between Earth System and Strata

Comments by Neil Rose

Benjamin Steininger

Molecular Mobilization

Comments by Jahnavi Phalkey

Karolina Sobecka & Desiree Foerster

The Carbon Catalogue

Comments by Bernadette Bensaude-Vincent

12:00 pm *Lunch Break*

1:15 pm

Session 2: Anthrobiogeochemical Cycles

Chair: Giulia Rispoli

Juan-Andres Leon
Radiocarbon Reflections

Comments by Irka Hajdas

Benjamin Johnson
A Future Marker for the Anthropocene: Closed Chemical Cycles

Comments by Colin Summerhayes

Julian Charrière
Weight of Shadows

Comments by Liz Thomas

Eva Horn
The Case of Air

Comments by Adam Wickberg

3:30 pm

Coffee Break

4:00 pm

Session 3: Nuclear Anthropocene

Round table discussion 1

Nuclear Governance

Chair: Maria Rentetzi

Xavier Roque, Maël Goumri, John Krige, Kyoko Sato

5:00 pm

Short Break

5:15 pm

Round table discussion 2

Nuclear Anthropocene

Chair: Bernadette Bensaude-Vincent

Kate Brown, Nestor Herran, Angela N. H. Creager, Tania Navarro-Rodriguez & Soraya Boudia

6:15 pm

Short Break

6:30 pm

Artist Talk

Moderation: Jahnavi Phalkey

Brian Holmes & Jeremy Bolen

Signals of What? Filming the Anthropocene Mode of Production

7:45 pm

Dinner

Friday, September 24

10:00 am

Session 4: Biotic Change

Chair: Barbara Fiałkiewicz-Koziet

Luke Keogh

Ephemeral Biosphere: A Very Brief History of Biological Invasions

Comments by Mark Williams

Killian Quigley

Reading the Anthropocene Ocean

Comments by Reinhold Leinfelder

Nina Canell & Robin Watkins

Silurian Harvest

Comments by Francine McCarthy

Matthew C. Wilson

Atmosphanae, Colonialialis ...

Comments by Jan Zalasiewicz

12:15 pm

Lunch Break

1:30 pm

Session 5: Novel Materials and Technofossils

Chair: Pietro D. Omodeo

Andrea Westermann

Against the Aestheticization of Technofossils: Considering Migrant Labor and Petrochemical Feedstocks in the History of Plastic

Comments by Juliana Assunção Ivar do Sul (tbc)

Katrin Hornek & Kira Lappé

Vienna's Anthropocene

Comments by Matt Edgeworth

Cristian Simonetti & Matt Edgeworth

Concrete: A Stratigraphic Marker for the Anthropocene

Comments by Franz Mauelshagen

3:15 pm

Short Coffee Break

3:30 pm

Session 6: Critical Environments

Chair: Jürgen Renn

Adam Bobbette

A Javanese Anthropocene

Comments by Julia A. Thomas

Xandra van der Eijk

Visualizing Anthropogenic Markers in the Polluted Sediment of Sydney Harbour

Comments by Kristine DeLong (tbc)

4:40 pm

Short Break

5:00 pm

Julia A. Thomas

Changing Hopes as Anthropocene Markers

Comments by Brian Holmes

Kim Fortun
Toward Anthropocene Kaleidoscopes

Comments by Simon Turner

6:10 pm

Wrap-up session

Chair: Christoph Rosol

Brief reflections on the workshop by Simon Turner, Bernd Scherer, Eva Horn (tbc), Jürgen Renn, Giulia Rispoli

General discussion and concluding remarks

7:00 pm

Dinner