August, 2023

CURRICULUM VITAE

Kazumi Ozaki
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Tokyo, Japan 152-8551

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CURRENT POSITION

Associate Professor, Department of Earth and Planetary Sciences, Tokyo Institute of Technology, Tokyo, Japan

EDUCATIONAL BACKGROUND

Ph.D.	Department of Earth and Planetary Science, University of Tokyo, Tokyo, Japan	2009－12
M.S.	Department of Earth and Planetary Science, University of Tokyo, Tokyo, Japan	2007－09
B.S.	Department of Physics, Tokyo Metropolitan University, Tokyo, Japan	2003－07

DEGREES RECEIVED

Ph.D.	(Earth Planetary Science)	University of Tokyo, Tokyo, Japan	2012
M.S.	(Earth Planetary Science)	University of Tokyo, Tokyo, Japan	2009
B.S.	(Physics)	Tokyo Metropolitan University, Tokyo, Japan	2007

POSTDOCTORAL TRAINING

NASA Postdoctoral Program Fellow (NASA Astrobiology Institute, Alternative Earths Team), School of Earth and Atmospheric Sciences, Georgia Institute of Technology, Atlanta, GA, USA (Dr. C.T. Reinhard)	2016－18
Atmosphere and Ocean Research Institute, University of Tokyo, Chiba, Japan (Professor Y. Yokoyama)	2012－16

FACULTY ACADEMIC APPOINTMENTS

Associate	Tokyo Institute of Technology, Department of Earth and Planetary	2022－

Professor	Sciences, Tokyo, Japan	
Assistant Professor	Toho University, Department of Environmental Science, Chiba, Japan	2018－22

OTHER PROFESSIONAL POSITIONS

Research Assistant	University of Tokyo GCOE: From the Earth to “Earths”	2010
Teaching Assistant	FORTRAN programming, The University of Tokyo	2007－09

ACADEMIC HONORS AND AWARDS

Tokyo Tech Challenging Research Award	2023
Top Cited Article 2019－2020 (Geobiology)	2021
Top Downloaded Paper 2018－2019 (Geobiology)	2020
Young Scientist Award, Palao[10]: Paleosciences Society	2019
Young Scientist Award, The Geochemical Society of Japan	2019
NASA Postdoctoral Program Fellowship	2016－18
JpGU meeting Session convener-recommended articles, Japan Geoscience Union	2015
Exemption from scholarship repayment due to excellent grades	2012
Student Outstanding Presentation Award, The Geochemical Society of Japan	2011
Student Outstanding Presentation Award, The Geochemical Society of Japan	2010

LIST OF PUBLICATIONS

PEER-REVIEWED JOURNAL PAPERS

1. Watanabe, Y., Tajika, E., and Ozaki, K.

   Evolution of iron and oxygen biogeochemical cycles during the Precambrian

   Geobiology, 2023, in press.

2. Saitoh, M, Nishizawa, M., Ozaki, K., Ikeda, M., Ueno, Y., Takai, K., and Isozaki, Y.

   Nitrogen isotope record from a mid-oceanic paleo-atoll limestone to constrain the redox state of the Panthalassa ocean in the Capitanian (Late Guadalupian, Permian)

   Paleoceanography and Paleoclimatology, 38, e2022PA004573, 2023. doi.org/10.1029/2022PA004573

3. Watanabe, Y., Tajika, E., and Ozaki, K.

   Biogeochemical transformations after the emergence of oxygenic photosynthesis and conditions for the first rise of atmospheric oxygen

   Geobiology, 00, 1–19, 2023. doi.org/10.1111/gbi.12554

4. Ozaki, K.

   Impacts of the evolution of photosynthesis on Earth's environment

   Journal of the Japanese Society of Photosynthesis Research, 32, 140–150, 2022.

   (In Japanese) [Link]

5. Ozaki, K., Cole, D. B., Reinhard, C. T., and Tajika, E.

   CANOPS-GRB v1.0: a new Earth system model for simulating the evolution of ocean-atmosphere chemistry over geologic timescales

   Geoscientific Model Development, 15, 7593–7639, 2022. doi.org/10.5194/gmd-15-7593-2022

6. Cole, D. B., Ozaki, K., and Reinhard, C. T.

   Atmospheric oxygen abundance, marine nutrient availability, and organic carbon fluxes to the seafloor

   Global Biogeochemical Cycles, 36, e2021GB007052, 2022. doi.org/10.1029/2021GB007052

7. Ozaki, K. and Reinhard, C. T.

   The future lifespan of Earth's oxygenated atmosphere

   Nature Geoscience, 14, 138–142, 2021. doi.org/10.1038/s41561-021-00693-5

   [press release@Toho_English] [press release@Toho_Japanese]

8. Kuroyanagi, A., Kawahata, H., Ozaki, K., Suzuki, A., Nishi, H., and Takashima, R.

   What drove the evolutionary trend of planktic foraminifers during the Cretaceous: Oceanic Anoxic Events (OAEs) directly affected it?

   Marine Micropaleontology, 161, 101924, 2020. doi.org/10.1016/j.marmicro.2020.101924

9. Ozaki, K.

   The coupled evolution of the atmosphere and life: A biogeochemical modeling perspective

   Geochemistry, 54, 153–172, 2020. doi.org/10.14934/chikyukagaku.54.153

   (In Japanese with English abstract)

   ***Special paper for a Young Scientist Award 2019 by The Geochemical Society of Japan**

10. Ikeda, M., Ozaki, K., and Legrand, J.

    Impact of 10-Myr scale monsoon dynamics on Mesozoic climate and ecosystems

    Scientific Reports, 10, 11984, 2020. doi.org/10.1038/s41598-020-68542-w

    [press release@UT] [press release@Toho]

11. Planavsky, N. J., Reinhard, C. T., Isson, T. T., Ozaki, K., and Crockford, P. W.

    Large mass-independent oxygen isotope fractionations in mid-Proterozoic sediments: Strong evidence for a low-oxygen atmosphere

    Astrobiology, 20, 628–636, 2020. doi:10.1089/ast.2019.2060

12. Ozaki, K., Thompson, K., Simister, R. L., Crowe, S. A., and Reinhard, C. T.

    Anoxygenic photosynthesis and the delayed oxygenation of Earth's atmosphere

    Nature Communications, 10:3026, 2019. doi.org/10.1038/s41467-019-10872-z

    [press release@Toho] [press release@GT]

13. Schwieterman, E. W., Reinhard, C. T., Olson, S. L., Ozaki, K., Harman, C. E., Hong, P. K.,and Lyons, T. W.

    Rethinking CO "Anti-Biosignatures" in the search for life beyond Earth

    The Astrophysical Journal, 874:9, 2019. doi.org/10.3847/1538-4357/ab05e1

    ***Editor's highlighted paper**

14. Ozaki, K., Reinhard, C. T., and Tajika, E.

    A sluggish mid-Proterozoic biosphere and its effect on Earth's redox balance

    Geobiology, 17, 3–11, 2019. doi.org/10.1111/gbi.12317

    [press-release@Toho] [press-release@GT]

    ***Top Downloaded Paper 2018-2019, *Top Cited Paper 2018-2019**

15. Ozaki, K., Tajika, E., Hong, P.K., Nakagawa, Y., and Reinhard, C.T.

    Effects of primitive photosynthesis on Earth's early climate system

    Nature Geoscience, 11, 55–59, 2018. doi.org/10.1038/s41561-017-0031-2

    [press-release@UT] [press-release@GT]

16. Ikeda, M., Tada, R., and Ozaki, K.

    Astronomical pacing of the global silica cycle recorded in Mesozoic bedded cherts

    Nature communications, 8: 15532, 2017. doi: 10.1038/ncomms15532

[press-release@ShizuokaUniv.]

17. Reinhard, C.T., Planavsky, N.J., Gill, B.C., Ozaki, K., Robbins, L.J., Lyons, T.W., Fischer, W.W., Wang, C., Cole, D.B., and Konhauser, K.O.
    Evolution of the global phosphorus cycle
    Nature, 541, 386–389, 2017. doi.org/10.1038/nature20772
    [press-release@GT]
18. Lenton, T.M., Dahl, T.W., Daines, S.J., Mills, B.J.W., Ozaki, K., Saltzman, M.R., and Porada, P.
    Earliest land plants created modern levels of atmospheric oxygen
    Proceedings of the National Academy of Sciences, 113, 9704–9709, 2016.
    doi.org/10.1073/pnas.1604787113
    [press-release@Exeter]
19. Lee, Cin-Ty A., Yeung, L.Y., McKenzie, N.R., Yokoyama, Y., Ozaki, K., and Lenardic, A.
    Two-step rise of atmospheric oxygen linked to the growth of continents
    Nature Geoscience, 9: 417–424, 2016. doi.org/10.1038/ngeo2707
    [press-release@UT]
20. Ozaki, K. and Tajika, E.
    Biogeochemical effects of atmospheric oxygen concentration, phosphorus weathering, and sea-level stand on oceanic redox chemistry: Implications for greenhouse climates
    Earth and Planetary Science Letters, 373, 129–139, 2013. doi.org/10.1016/j.epsl.2013.04.029
21. Kashiyama, Y., Ozaki, K., and Tajika, E.
    Impact of the evolution of carbonate ballasts on marine biogeochemistry in the Mesozoic and associated changes in energy delivery to subsurface waters
    Paleontological Research, 15, 89–99, 2011. doi.org/10.2517/1342-8144-15.2.089
22. Ozaki, K., Tajima, S., and Tajika, E.
    Conditions required for oceanic anoxia/euxinia: Constraints from a one-dimensional ocean biogeochemical cycle model
    Earth and Planetary Science Letters, 304, 270–279, 2011. doi.org/10.1016/j.epsl.2011.02.011

White papers

1. Reinhard, C.T., Bozdag, O., Cole, D.B., Crowe, S.A., Droser, M.L., Erwin, D.H., Javaux, E.J., Love, G.D., Lyons, T.W., Mills, D.B., Olson, S.L., Ozaki, K., Planavsky, N.J., Ratcliff, W.C., Ridgwell, A., Saupe, E.E., Schwieterman, E.W., Sperling, E.A., Stockey, R.G., and Tarhan, L.G.
    Environmental drivers of evolving biological complexity on Earth

[white paper submitted in response to the Request for Information (RFI) on the Astrobiology Research Coordination Network – Early Cells to Multicellularity (ECM)], 2020.

2. Reinhard, C.T., Schwieterman, E.W., Olson, S.L., Planavsky, N.J., Arney, G.N., Ozaki, K., Som, S., Robinson, T.D., Domagal-Goldman, S.D., Lisman, D., Mennesson, B., Meadows, V.S., and Lyons, T.W. The remote detectability of Earth's biosphere through time and the importance of UV capability for characterizing habitable exoplanets
[white paper submitted in response to the solicitation of feedback for the Decadal Survey on Astronomy and Astrophysics (Astro 2020) by the National Academy of Sciences], 2019

ACQUIRED EXTERNAL RESEARCH GRANTS, FELLOWSHIPS, AND FUNDS

2023	**Tokyo Tech Challenging Research Award** Allocated direct cost: ¥ 2,700,000 Project title: Tipping point assessment of oceanic deoxygenation based on the coupled biogeochemical cycles of P, S, and Fe
2023－2029	**Fusion Oriented Research for disruptive Science and Technology (FOREST), Japan Science and Technology Agency (JST) Project (PI)** Allocated direct cost: ¥ 45,500,000 Project title: Towards a general theory of the evolution of habitable planets based on the evolutional history of the Earth
2022－2024	**Grant-in-Aid for Challenging Research (Exploratory), Japan Society for the Promotion of Science (JSPS) Project** (PI) Allocated direct cost: ¥ 6,240,000 Project title: Edge of Anoxia: Redox evolution of the ocean-atmosphere system during the early-mid Paleozoic
2022－2023	**Mitsubishi Foundation** (PI) Allocated direct cost: ¥ 2,500,000 Project title: Climate stability mechanism for the Earth-like planets with anoxic atmosphere
2022－2027	**Grant-in Aid for Transformative Research Areas (A), Japan Society for the Promotion of Science (JSPS) Project** (PI) Allocated direct cost: ¥ 43,550,000 (Total budget: ¥ 180,700,000) Project title: Theory group: Modeling of CO world
2022－2027	**Grant-in Aid for Transformative Research Areas (A), Japan Society for the Promotion of Science (JSPS) Project** (Co-PI) Allocated direct cost: ¥ 13,700,000 (Total budget: ¥ 191,100,000) Project title: CO world
2020－2022	**Grant-in Aid for Scientific Research (C), Japan Society for the Promotion of Science (JSPS) Project** (PI) Allocated direct cost: ¥ 3,400,000 (Total budget: ¥ 4,420,000) Project title: Future life span of Earth’s oxygenated atmosphere constrained by a global redox budget model
2018－2021	**Grant-in-Aid for Fostering Joint International Research (B), Japan Society for the**

	Promotion of Science (JSPS) Project (Co-PI) Allocated direct cost: ¥ 4,000,000 (Total budget: ¥ 15,860,000) Project title: Earth system variations and its impacts on the ecosystem during the Mesozoic deciphered from the super-continent and super-oceans.
2018－2019	**Grant for Basic Science Research Projects from the Sumitomo Foundation** (PI) Total budget: ¥ 1,500,000 Project title: Theoretical study on the Archean climate stability based on the coupled H-Fe-C biogeochemical cycles
2018－2020	**Grant-in-Aid for Research Activity start-up, Japan Society for the Promotion of Science (JSPS) Project** (PI) Direct cost: ¥ 2,990,000 Project title: Proterozoic atmospheric chemistry constrained by the Earth system model
2018－2019	**Grant-in-Aid for start-up, Toho University** (PI) Direct cost: ¥ 1,000,000 Project title: Global biospheric productivity during the early-mid Archean constrained by a global redox budget model
2016－2018	**NASA Postdoctoral Program, Universities Space Research Association (USRA)** (PI) Total budget: $ 122,124 Project title: New quantitative approaches toward understanding the life history of an inhabited planet
2013－2016	**Grant-in-Aid for Young Scientists (B), Japan Society for the Promotion of Science (JSPS) Project** (PI) Total budget: ¥ 4,290,000 Project title: Theoretical study on the oceanic-atmospheric chemistry and its stability during the mid-Proterozoic
2012	**TORII Endo Grant, The Geochemical Society of Japan** Total budget: ¥ 100,000
2011－2012	**Sasakawa Scientific Research Grant, The Japan Science Society** (PI) Total budget: ¥ 560,000 Project title: Development of an ocean biogeochemical model and its application to the Oceanic Anoxic Events
2010	**Research Assistant, University of Tokyo GCOE: From the Earth to "Earths"** Project title: Modeling study on the biogeochemical conditions for the Oceanic Anoxic Events

ACADEMIC ACTIVITIES

ACADEMIC HONORS AND AWARDS

Tokyo Tech Challenging Research Award	2023
Top Cited Article 2019－2020 (Geobiology)	2021
Top Downloaded Paper 2018－2019 (Geobiology)	2020
Young Scientist Award, Palao[10]: Paleosciences Society	2019
Young Scientist Award, The Geochemical Society of Japan	2019
NASA Postdoctoral Program Fellowship	2016－18
JpGU meeting Session convener-recommended articles, Japan Geoscience Union	2015
Student Outstanding Presentation Award, The Geochemical Society of Japan	2011
Student Outstanding Presentation Award, The Geochemical Society of Japan	2010

COMMITTEE SERVICE

Geochemistry of the biosphere, Annual meeting of The Geochemical Society of Japan, Co-Convener	2023
Geochemistry of the biosphere, Annual meeting of The Geochemical Society of Japan, Co-Convener	2022
Geochemistry of the biosphere from the early Earth to the present, Annual meeting of The Geochemical Society of Japan, Co-Convener	2020
Short course for young scientists/students by The Geochemical Society of Japan, a member of the steering committee	2020
Dynamics and Stability of Earth's Oxygenated Biosphere, Goldschmidt Conference, California, Co-Convener	2014

PROFESSIONAL SOCIETIES

Geobiology Society	Member	2017－
Paleo[10]: Paleosciences Society	Member	2012－
European Geosciences Union	Member	2011－
The Geochemical Society of Japan	Member	2010－
American Geophysical Union	Member	2008－
The Geological Society of Japan	Member	2008－
Japan Geosciences Union	Member	2007－

EDITORIAL ACTIVITIES

Ad hoc Reviewer

Nature, *Nature Geoscience*, *Nature Astronomy*, *Nature Communications*, *Science Advances*, *Communications Earth & Environment, Earth and Planetary Science Letters*, *Geology*, *American Journal of Science*, *Paleoceanography and Paleoclimatology*, *National Science Review*, *Proceedings of the Japan Academy, Ser. B.*

INVITED TALKS AT ACADEMIC CONFERENCE/WORKSHOP

1. *Ozaki, K.
   The search strategy of biosignature on exoplanets based in the evolutionary history of the Earth
   The Society for the Study of the Origin and Evolution of Life Japan 2023 (Virtual, September 2023) [scheduled]
2. *Ozaki, K.
   Redox evolution of the ocean-atmosphere system and nutrient cycle
   The Geochemical Society of Japan (Tokyo, September 2023) [scheduled]
3. *Ozaki, K.
   The coupled evolution of life and the atmosphere during the early Archean
   JpGU Meeting 2022 (Virtual, May 2022)
4. *Ozaki, K.
   The coupled evolution of photosynthesis and the atmosphere
   The Japan Society of Photosynthesis Research (Virtual, May 2022)
5. *Ozaki, K.
   How has the primitive biosphere affected the atmosphere?
   10th ELSI International Symposium (Virtual, January 2022)
6. *Ozaki, K.
   Development of a numerical model towards bioexochemistry and its future direction
   Symposium for young scientists, The Geochemical Society of Japan (Virtual, July 2021)
7. *Ozaki, K.
   Conditions required for oceanic anoxia/euxinia revisited
   Goldschmidt conference (Virtual, July 2021)
8. *Ozaki, K. and Reinhard, C. T.
   The future life span of Earth's oxygenated biosphere and its controlling factors
   JpGU-AGU Joint Meeting 2020 (Virtual, July 2020)
9. *Ozaki, K.
   The history of Earth's biospheric productivity: a biogeochemical modeling perspective
   JpGU-AGU Joint Meeting 2020 (Virtual, July 2020)

10. *Ozaki, K.

    Global biospheric productivity through Earth history and its limiting factors

    The Geochemical Society of Japan (Tokyo, September 2019)

11. *Ozaki, K.

    Phosphorus biogeochemical cycle and the evolution of ocean-atmosphere system

    The 1st Workshop for Phosphorus and the Origin of Life (Tokyo, September 2019)

12. Cole, D., Ozaki, K., Planavsky, N., and Reinhard, C. T.

    Intermediate atmospheric oxygen levels, ocean ventilation, and global biospheric productivity

    Goldschmidt conference (Barcelona, Spain, August 2019)

13. *Ozaki, K.

    Microbial biosphere and oceanic-atmospheric chemistry through Archean-Phanerozoic

    The Palaeontological Society of Japan (Shizuoka, June 2019)

14. *Ozaki, K.

    The coupled evolution of life and atmosphere

    The 2nd Geobiology Society Conference (Banff, Canada, June 2019)

15. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P. K.

    Behaviors of carbon cycle system and inevitability of the hot climate in the Archean Earth

    JpGU Meeting 2019 (Chiba, May 2019)

16. *Ozaki, K.

    Limited biological productivity in the Archean ocean and its biogeochemical implications

    JpGU Meeting 2019 (Chiba, May 2019)

17. *Ozaki, K.

    The co-evolution of atmosphere and biosphere

    The 1st International Workshop for Aqua Planetology (ELSI, Tokyo, March 2019)

18. *Ozaki, K.

    Effects of primitive biosphere and reductant supply from the mantle on the Earth's early climate

    JpGU Meeting 2018 (Chiba, May 2018)

19. Ikeda, M., Ozaki, K., and Tada, R.

    Astronomically paced changes in continental weathering rates recorded in the Meosozoic bedded chert

    JpGU Meeting 2018 (Chiba, May 2018)

20. *Ozaki, K. and Tajika, E.

    Stability and Dynamics of Proterozoic Oceanic Euxinia

    Goldschmidt conference (Yokohama, Japan, June 2016)

21. Reinhard, C., Crowe, S., Ozaki, K., and Thompson, K.J.

    An ecophysiological throttle on planetary oxygenation during the Archean

    Goldschmidt conference (Yokohama, Japan, June 2016)

22. *Ozaki, K. and Tajika, E.

    Climatic, tectonic, and biological factors affecting the oxidation state of the atmosphere and oceans:

implications for Phanerozoic O_2 evolution

The American Geophysical Union (San Francisco, USA, December 2015)

23. *Ozaki, K.

Biogeochemical cycles and the redox stability of the ocean-atmosphere system

The Paleosciences Society (Tokyo, Japan, November 2015)

AWARD LECTURE

1. *Ozaki, K.

Theoretical study on the biogeochemical evolution of Earth's surface environments

The Geochemical Society of Japan (Tokyo, September 2019)

OTHER PRESENTATIONS AT ACADEMIC CONFERENCE

International conferences

1. Kuroyanagi, A., Kawahata, H., Ozaki, K., Suzuki, A., Nishi, H., Takashima, R.

Examining the effect of Cretaceous oceanic anoxic events (OAEs) on the evolutionary trend of planktonic foraminifera

2nd Asian Palaeontological Congress (Tokyo, August 2023) [scheduled]

2. *Ozaki, K. and Watanabe, Y.

CO_2, CO, and CH_4 abundance in the anoxic atmosphere on Earth-like exoplanets and its implications for the search for habitable planets

Goldschmidt conference (Lyon, July 2023)

3. Gilhooly, W., Pas, B. V., Smart, M. S., Filippeli, G., Ozaki, K., Reinhard, C. T., Marshall, J. E. A., and Whiteside, J.

Land plant radiation and its linkages to global marine anoxia during the Devonian

Goldschmidt conference (Lyon, July 2023)

4. *Ozaki, K.

Coupled evolution of the atmosphere and life before the advent of oxygenic photosynthesis

Japanese-Canadian Frontiers of Science Symposium (JCFoS) (Bunff, March 2023)

5. Watanabe, Y., Tajika, E., and Ozaki, K.

Co-evolution of atmosphere and marine biosphere driven by oxygenic photosynthesis before the Great Oxidation Event

Goldschmidt conference (Hybrid, July 2022)

6. Aoyama, K., Tajika, E., Ozaki, K.

Estimating burial rates of organic carbon in terrestrial and marine environments through Phanerozoic time using a geochemical model

Goldschmidt conference (Hybrid, July 2022)

7. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P. K.

Haze formation limits the primary productivity of marine anaerobic ecosystem during the Archean
Goldschmidt conference (Virtual, July 2021)

8. Smart, M. S., Ozaki, K., Reinhard, C. T., Marshall J. E. A., Whiteside, J., Gilhooly, W., and Filippelli, G.
Modeling global biosphere response to enhanced riverine nutrient delivery during the Late Devonian Kellwasser Event
Goldschmidt conference (Virtual, July 2021)
9. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P. K.
Effect of hydrocarbon haze on marine primary production in the early Earth system
EGU Meeting 2021 (Virtual, April 2021)
10. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P. K.
Potential positive feedback mechanisms in an anoxic environmental system of a planet with CO_2-CH_4 atmosphere
JpGU-AGU Joint Meeting 2020 (Virtual, July 2020)
11. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P. K.
Effect of hydrocarbon haze on climate stability under weakly oxidized late Archean environment
JpGU-AGU Joint Meeting 2020 (Virtual, July 2020)
12. Miki, A., Tajika, E., Ozaki, K.
Modelling the behaviors of marine carbon isotopic composition after Neoproterozoic snowball Earth event
JpGU-AGU Joint Meeting 2020 (Virtual, July 2020)
13. Aoyama, K., Tajika, E., Ozaki, K.
Variations of burial rates of organic carbon in terrestrial and marine environments during the Phanerozoic
JpGU-AGU Joint Meeting 2020 (Virtual, July 2020)
14. Cole, D. B., Ozaki, K., and Reinhard C. T.
Biogeochemically feasible levels of nutrient availability, biospheric productivity, and atmospheric oxygen
Goldschmidt conference (Virtual, June 2020)
15. *Ozaki, K. and Miura, Y.
Sulfur cycle dynamics during the Great Oxidation Event
Goldschmidt conference (Virtual, June 2020)
16. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P. K.
Global carbon cycle and climate stability in the Archean: Haze-free warm condition in the anoxic Earth system
American Geophysical Union (San Francisco, USA, December 2019)
17. *Ozaki, K. and Reinhard, C. T.
Limited biological productivity in the Archean anoxic ocean
Goldschmidt conference (Barcelona, Spain, August 2019)

18. Planavsky, N., Reinhard, C. T., Isson, T., Ozaki, K., and Crockford, P.
    Low Mid-Proterozoic atmospheric oxygen levels?
    Goldschmidt conference (Barcelona, Spain, August 2019)
19. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P. K.
    Global carbon cycle and climate stability in the early Earth system
    AbSciCon (Seattle, Washington, June 2019)
20. *Ozaki, K. and Reinhard, C. T.
    The future life span of oxygen-based biosignature on Earth
    The Annual Meeting of the European Geosciences Union (Wien, Austria, April 2019)
21. *Ozaki, K., Tajika, E., Hong, P.K., Nakagawa, Y., and Reinhard, C.T.
    Climatic consequences of methane boosting by photoferrotrophs in the Archean atmosphere
    Goldschmidt conference (Paris, France, August 2017)
22. *Ozaki, K., Tajika, E., Hong, P.K., and Reinhard, C.T.
    Primitive photosynthesis and Earth's early climate
    The 1st Geobiology Society Conference (Banff, Canada, June 2017)
23. *Ozaki, K., Tajika, E., and Reinhard, C.T.
    Limited O_2 production in the Mid-Proterozoic oceans
    AbSciCon (Mesa, USA, April 2017)
24. Ikeda, M., Ozaki, K., and Tada, R.
    Global silica cycle paced by astronomical cycles recorded in the Mesozoic bedded chert: Implications for early Mesozoic extinctions
    The Annual Meeting of the American Geophysical Union (San Francisco, USA, December 2016)
25. Takahashi, S., Gordon, G., Ozaki, K., Yamasaki, S., Kumura, K., Anbar, A., and Tada, R.
    Variations of U and Mo isotopes across the deep sea Permian-Triassic boundary
    Goldschmidt conference (Yokohama, Japan, June 2016)
26. *Ozaki, K. and Tajika, E.
    Towards a quantitative understanding of the mid-Proterozoic redox state of the atmosphere and oceans
    Goldschmidt conference (Prague, Czech Republic, August 2015)
27. *Ozaki, K. and Tajika, E.
    Widespread euxinia in the aftermath of the Lomagundi event: insights from a modeling study of ocean biogeochemical dynamics
    The Annual Meeting of the European Geosciences Union (Vienna, Austria, April 2015)
28. Harada, M., Ozaki, K., Tajika, E., and Sekine, Y.
    Overshoot of atmospheric oxygen caused by the Paleoproterozoic snowball glaciation: constraining its magnitude and duration from biogeochemical cycle modeling
    The Annual Meeting of the American Geophysical Union (San Francisco, USA, December 2014)
29. Kuroyanagi, A., Ozaki, K., and Kawahata, H.
    Effect of Cretaceous oceanic anoxic events on the evolutionary trend of planktonic foraminifera

The Annual Meeting of the American Geophysical Union (San Francisco, USA, December 2014)

30. Harada, M., Ozaki, K., Tajika, E., and Sekine, Y.
    Modeling dynamics of the rise of oxygen during Paleoproterozoic: deep water oxygenation and sulfate accumulation in the post-snowball ocean
    The Annual Meeting of the Geophysical Society of America (Vancouver, Canada, October 2014)
31. *Ozaki, K.
    Modeling oxygenation of an ocean-atmosphere system during the Late Ordovician-Devonian
    The Annual Meeting of the American Geophysical Union (San Francisco, USA, December 2013)
32. Harada, M., Tajika, E., Sekine, Y., and Ozaki, K.
    Numerical study of mechanisms and timescales of oxygenation and interpretation of geological records in the snowball Earth aftermath
    The Annual Meeting of the Geological Society of America (Denver, USA, October 2013)
33. *Ozaki, K. and Tajika, E.
    Conditions for Proterozoic anoxic and non-sulfidic ocean: Constraints from ocean biogeochemical cycle model
    Goldschmidt conference (Florence, Italy, August 2013)
34. Harada, M., Tajika, E., Sekine, Y., and Ozaki, K.
    Rise of oxygen induced by Paleoproterozoic snowball glaciation: Insights from biogeochemical cycle modeling
    The Annual Meeting of the American Geophysical Union (San Francisco, USA, December 2012)
35. *Ozaki, K. and Tajika, E.
    Modeling the Redox Chemistry of Mid-Proterozoic Atmosphere-Ocean System
    The Annual Meeting of the Geological Society of America (Charlotte, USA, October 2012)
36. *Ozaki, K. and Tajika, E.
    Modeling ocean acidification and de-oxygenation: Testing the linkage between large igneous province and Ocean Anoxic Event
    Goldschmidt conference (Montreal, Canada, June 2012)
37. *Ozaki, K. and Tajika, E.
    Modeling oceanic anoxia/euxinia induced by massive CO_2 injection
    Goldschmidt conference (Prague, Czech Republic, August 2011)
38. *Ozaki, K. and Tajika, E.
    Modeling oceanic redox conditions during the Phanerozoic: Constraints from a one-dimensional ocean biogeochemical cycle model
    The Annual Meeting of the European Geosciences Union (Vienna, Austria, April 2011)
39. *Ozaki, K. and Tajika, E.
    Conditions for global ocean anoxia obtained from a one-dimensional ocean biogeochemical cycle model
    The Annual Meeting of the American Geophysical Union (San Francisco, USA, December 2008)

Domestic (in Japan) conferences

1. *Ozaki, K.
   Modeling of seawater carbon isotopic evolution during the Archean
   The Geochemical Society of Japan (Tokyo, September 2023) [scheduled]
2. Watanabe, Y., Ozaki, K., Harada, M., Matsumoto, H., and Tajika, E.
   Environmental fluctuations triggered by eruptions of large igneous provinces during the Precambrian
   The Geochemical Society of Japan (Tokyo, September 2023) [scheduled]
3. Watanabe, Y., Tajika, E., and Ozaki, K.
   Biogeochemical transformations and climatic evolution after the emergence of oxygenic photosynthesis
   The Geochemical Society of Japan (Tokyo, September 2023) [scheduled]
4. *Ozaki, K.
   Conditions required for CO worlds and biogeochemical cycles
   CO world Plenary Meeting Sapporo 2023 (Sapporo, August 2023)
5. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P.
   TITLE
   JpGU Meeting 2023 (Hybrid, May 2023)
6. *Ozaki, K. and Watanabe, Y.
   Conditions required for the CO runaway on early Earth and biogeochemical cycles
   JpGU Meeting 2023 (Hybrid, May 2023)
7. Watanabe, Y., Tajika, E., and Ozaki, K.
   TITLE
   The Paleosciences Society (Kashiwanoha, October 2022)
8. Kuroda, Y. and Ozaki, K.
   TITLE
   The Geochemical Society of Japan (Virtual, September 2022)
9. *Ozaki, K., Watanabe, Y., and Kuroda, Y.
   Constraints on atmospheric chemistry (CO_2, CO, and CH_4) during the Archean
   The Geochemical Society of Japan (Kochi, September 2022)
10. Watanabe, Y., Tajika, E., and Ozaki, K.
    Co-evolution of marine oxygen and iron biogeochemical cycles in the history of the Earth
    JpGU Meeting 2022 (Virtial, May 2022)
11. Watanabe, Y., Tajika, E., and Ozaki, K.
    Interactions of atmosphere and marine biosphere after the emergence of oxygenic photosynthesis in the early Earth
    JpGU Meeting 2022 (Virtual, May 2022)
12. Kobayashi, H. and Ozaki, K.
    Biogeochemical modeling perspective on the role of phosphorus cycle during the Great Oxidation Event
    JpGU Meeting 2022 (Virtual, May 2022)

13. *Ozaki, K.
    The future life span of the breathable air on Earth revisited
    The Paleosciences Society (Virtual, November 2021)
14. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P K.
    Atmosphere-ocean-biosphere coupling driven by the activity of oxygenic photosynthesis during the early Proterozoic
    The Paleosciences Society (Virtual, November 2021)
15. *Ozaki, K.
    Constraining the marine P level and atmospheric O2 level during the Proterozoic-Phanerozoic using a global redox balance model
    The Geological Society of Japan (Virtual, September 2021)
16. Aoyama, K., Tajika, E., and Ozaki, K.
    Relationship between burial rates of organic matter in the ocean and on land and atmospheric oxygen levels throughout the Phanerozoic
    The Geological Society of Japan (Virtual, September 2021)
17. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P K.
    Upper limit of the activity of anaerobic microbial ecosystem in the early Earth
    JpGU Meeting 2021 (Virtual, June 2021)
18. Aoyama, K., Tajika, E., and Ozaki, K.
    Variations of land and oceanic organic carbon burial and their effects on atmospheric oxygen levels through Phanerozoic
    JpGU Meeting 2021 (Virtual, June 2021)
19. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P. K.
    Primary production and iron cycle in the Archean constrained by climate stability
    The Paleosciences Society (Virtual, November 2020)
20. Aoyama, K., Tajika, E., and Ozaki, K.
    Carbon cycle modeling considering organic carbon burial in land and marine environment during the Phanerozoic
    The Geochemical Society of Japan (Virtual, November 2020)
21. Miki, A., Tajika, E., and Ozaki, K.
    Changes in a ratio of iron and phosphorus in the ocean and the rise of oxygen after the Paleoproterozoic snowball Earth event
    The Geochemical Society of Japan (Virtual, November 2020)
22. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P.K.
    Feedback mechanisms of marine microbial ecosystem under the hazy Archean atmosphere
    The Geochemical Society of Japan (Virtual, November 2020)
23. Miura, Y. and Ozaki, K.
    Can snowball Earth hypothesis explain the Great Oxidation Event?: An examination based on the sulfur

cycle dynamics

The Paleosciences Society (Tsukuba, November 2019)

24. Watanabe, Y., Tajika, E., and Ozaki, K.

    Roles of the rise in the atmospheric oxygen level in the climate stability during the Archean

    The Paleosciences Society (Tsukuba, November 2019)

25. Haga, M., Tajika, E., and Ozaki, K. *** Student Outstanding Presentation Award**

    Marine biogeochemical cycle and response of marine ecosystem during the Cretaceous oceanic anoxic events

    The Paleosciences Society (Tsukuba, November 2019)

26. Aoyama, K., Tajika, E., and Ozaki, K.

    Organic carbon burial on land and ocean during the Phanerozoic

    The Paleosciences Society (Tsukuba, November 2019)

27. Miki, A., Tajika, E., and Ozaki, K. *** Student Outstanding Presentation Award**

    Modeling the behaviors of marine carbon isotope after Proterozoic snowball Earth

    The Paleosciences Society (Tsukuba, November 2019)

28. *Ozaki, K.

    Atmospheric composition during the mid-Proterozoic constrained by a global redox budget model

    The Paleosciences Society (Tsukuba, November 2019)

29. Haga, M., Tajika, E., and Ozaki, K.

    Marine biogeochemical cycle and responses of marine ecosystem in the ocean anoxic events during Cretaceous

    The Geological Society of Japan (Yamaguchi, September 2019)

30. Miura, Y. and Ozaki, K.

    Sulfur cycle dynamics during the Great Oxidation Event

    The Geological Society of Japan (Yamaguchi, September 2019)

31. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P. K.

    Global carbon cycle and climate stability in the Archean implied from a coupled model of the atmospheric photochemical system and anoxygenic microbial ecosystem

    The Geochemical Society of Japan (Tokyo, September 2019)

32. Haga, M., Tajika, E., and Ozaki, K.

    Marine biogeochemical cycles of nutrients and primary producers in the ocean anoxic events during Cretaceous

    The Geochemical Society of Japan (Tokyo, September 2019)

33. Miki, A., Tajika, E., and Ozaki, K.

    Modelling the behaviors of marine carbon isotope after Paleoproterozoic snowball Earth

    The Geochemical Society of Japan (Tokyo, September 2019)

34. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P. K.

    Effects of the formation of hydrocarbon aerosols on the climate stability of Earth-like planets and their habitability

    JpGU Meeting 2019 (Chiba, May 2019)

35. Haga, M., Tajika, E., and Ozaki, K.

    Response of primary producers in the ocean anoxic events during the Cretaceous

    JpGU Meeting 2019 (Chiba, May 2019)

36. Miura, Y. and Ozaki, K.

    Biogeochemical dynamics during the Great Oxidation Event constrained by a biogeochemical model

    JpGU Meeting 2019 (Chiba, May 2019)

37. Watanabe, Y., Tajika, E., Ozaki, K., and Hong, P. K.

    Roles of the coupled system of atmospheric photochemistry and marine microbial ecosystem in the carbon cycle during the Archean

    The Paleosciences Society (Sendai, November 2018)

38. *Ozaki, K., Tajika, E., and Reinhard, C. T.

    A sluggish mid-Proterozoic biosphere and its effect on Earth’s redox balanc

    The Paleosciences Society (Sendai, November 2018)

39. *Ozaki, K. and Reinhard, C. T.

    The lifespan of Earth’s oxygenated biosphere

    The Geochemical Society of Japan (Okinawa, September 2018)

40. *Ozaki, K.

    Effects of primitive biosphere and reductant supply from the mantle on the Earth's early climate

    JpGU Meeting 2018 (Chiba, May 2018)

41. Tajika, E., Ozaki, K., and Kobayashi, T.

    Behaviors of marine primary producers during ocean anoxic events

    JpGU Meeting 2017 (Chiba, May 2017)

42. Takahashi, S., Gordon, G., Tada, R., Ozaki, K., Yamazaki, S., Kimura, K., and Anbar, A.

    U and Mo isotopes variations across the deep sea Permian-Triassic boundary

    The Paleosciences Society (Tokyo, November 2016)

43. *Ozaki, K. and Tajika, E.

    Limited oxygen generation during the mid-Proterozoic

    The Paleosciences Society (Tokyo, November 2016)

44. Tajika, E., Ozaki, K., and Oide, K.

Biogeochemical cycles and conditions for photic zone euxinia in the ocean

JpGU Meeting 2016 (Chiba, May 2016)

45. Nakagawa, Y., Hong, P.K., Ozaki, K., and Tajika, E.

Constraints on the surface environments and the ocean biological activities in the Archean

JpGU Meeting 2016 (Chiba, May 2016)

46. *Ozaki, K. and Tajika, E.

Biospheric oxygen production in the mid-Proterozoic oceans and its limiting factor

The Paleosciences Society (Tokyo, November 2015)

47. *Ozaki, K., Hirase, S., Kusama, Y., Iwasaki, W., Yokoyama, Y., Kawahata, H., Tada, R., and Yamamoto, M. ***JpGU meeting Session convener-recommended articles**

Development and application of Japan Sea Paleoenvironmental Database (JSPED)

JpGU Meeting 2015 (Chiba, May 2015)

48. *Ozaki, K. and Tajika, E.

Dynamics of Proterozoic oceanic euxinia and its impact on the biosphere

JpGU Meeting 2015 (Chiba, May 2015)

49. *Ozaki, K.

Evolution of biological pump and redox chemistry of the ocean-atmosphere system: Perspectives from a biogeochemical model

Symposium on the frontier of the modeling study of oceanic ecosystem (Chiba, March 2015)

50. Takahashi, S., Yamaguchi, A., Yamakita, S., Mizutani, A., Ishida, U., Yamamoto, S., Ikeda, M., Ozaki, K., and Tada, R.

Sedimentation rate of the end Permian to earliest Triassic black claystone strata in the Panthalassic deep sea

Paleoceanography symposium (Chiba, January 2015)

51. Mizutani, A., Takahashi, S., Ishida, U., Tada, R., Yamamoto, S., Ikeda, M., and Ozaki, K.

Reconstruction of Permian Triassic ocean redox conditions based on laminae preservation and pyrite framboids from the pelagic Panthalassic Ocean

Paleoceanography symposium (Chiba, January 2015)

52. Harada, M., Ozaki, K., Tajika, E., and Sekine, Y.

Oxygen transition with an overshoot after the Paleoproterozoic snowball Earth: quantification from biogeochemical cycle modeling

The Geochemical Society of Japan (Toyama, September 2014)

53. *Ozaki, K. and Tajika, E.

Euxinia overshoot in the aftermath of Lomagundi-Jatuli event

The Geological Society of Japan (Kagoshima, September, 2014)

54. Tajika, E., Harada, M., Ozaki, K., and Sekine, Y.

Dynamics of Earth's climate and biogeochemistry: Snowball earth event and a formation of manganese ore during the Paleoproterozoic

The Geological Society of Japan (Kagoshima, September, 2014)

55. Oide, K., Ozaki, K., and Tajika, E.

Conditions for photic zone euxinia deduced from ocean biogeochemical cycle model

JpGU Meeting 2014 (Chiba, May 2014)

56. *Ozaki, K.

Mechanisms regulating the redox state of an atmosphere ocean system during the Paleozoic

JpGU Meeting 2014 (Chiba, May 2014)

57. Takahashi, S., Yamagushi, A., Yamakita, S., Mizutani, A., Ishida, U., Yamamoto, S., Ikeda, M., Ozaki, K., and Tada, R.

Sedimentation rate of the end Permian to earliest Triassic black claystone strata in the Panthalassic deep sea

JpGU Meeting 2014 (Chiba, May 2014)

58. *Ozaki, K., Yokoyama, Y., and Tajika, E.

Conditions to produce climatic thermal maximum during the Cenomanian and Eocene

The Geological Society of Japan (Sendai, September, 2013)

59. Mizutani, A., Takahashi, S., Ishida, U., Tada, R., Yamamoto, S., Ikeda, M., and Ozaki, K.

Reconstruction of Permian Triassic ocean redox conditions based on laminae preservation and pyrite framboids from the pelagic Panthalassic Ocean

The Geological Society of Japan (Sendai, September, 2013)

60. *Ozaki, K. and Tajika, E.

Conditions required for Proterozoic oceanic chemistry: Constrains from an ocean biogeochemical cycle model

JpGU Meeting 2013 (Chiba, May 2013)

61. Morimi, T., Tajika, E., and Ozaki, K.

Reconstruction of atmospheric CO_2 and O_2 concentrations during the last 100 million years based on a model

JpGU Meeting 2013 (Chiba, May 2013)

62. Harada, M., Tajika, E., Sekine, Y., and Ozaki, K.

Modeling the rise of oxygen in the Snowball earth aftermath: implications for the Paleoproterozoic manganese and iron formation

JpGU Meeting 2013 (Chiba, May 2013)

63. *Ozaki, K. and Tajika, E.

Modeling study on the redox chemistry and biogeochemical cycles during the Proterozoic

Paleoceanography symposium (Chiba, January 2013)

64. *Ozaki, K.

Redox state of mid-Proterozoic oceans and biogeochemical cycles

Symposium by Paleosciences Society (Chiba, November 2012)

65. *Ozaki, K. and Tajika, E.

Modeling study of climatic and oceanographic variations driven by the rapid injection of carbon dioxide into the atmosphere

Paleoceanography symposium (Chiba, January 2012)

66. *Ozaki, K. and Tajika, E. ***Student Outstanding Presentation Award**

Oceanic acidification and de-oxygenation induced by rapid CO_2 injection

The Geochemical Society of Japan (Hokkaido, September 2011)

67. *Ozaki, K. and Tajika, E.

Modeling biogeochemical cycles and climate during oceanic anoxic events

JpGU Meeting 2011 (Chiba, May 2011)

68. *Ozaki, K. and Tajika, E.

Evolution of oceanic redox chemistry over the Phanerozoic: Constraints from a biogeochemical model

Paleoceanography symposium (Tokyo, January 2011)

69. *Ozaki, K. and Tajika, E.

Reconstruction of environmental variations during the Cretaceous oceanic anoxic events with a numerical model

The Geological Society of Japan (Toyama, September, 2010)

70. *Ozaki, K. and Tajika, E.***Student Outstanding Presentation Award**

Intensified nutrient input and coastal anoxia as a trigger for global anoxia

The Geochemical Society of Japan (Saitama, September 2010)

71. *Ozaki, K. and Tajika, E.

Biogeochemical cycles during the Cretaceous Oceanic Anoxic Events

Paleoceanography symposium (Tokyo, January 2010)

72. *Ozaki, K. and Tajika, E.

    Photic Zone Anoxia/Euxinia and Marine Biogheochemical Cycles Deduced from a One Dimensional Marine Biogeochemical Cycle Model

    JpGU Meeting 2009 (Chiba, May 2009)

73. *Ozaki, K. and Tajika, E.

    Conditions for Global Oceanic Anoxia/Euxinia Obtained from a one dimensional Marine Biogeochemical Cycle Model

    JpGU Meeting 2009 (Chiba, May 2009)

74. Takahashi, T., Ozaki, K., and Tajika, E.

    Development of a coupled C-S-P cycle model and reconstruction of the variations in atmosphere ocean system over the Phanerozoic

    JpGU Meeting 2009 (Chiba, May 2009)

75. Endo, K., Ozaki, K., and Tajika, E.

    Recovery of the ocean environment in the aftermath of the K/T boundary event deduced from a marine carbon cycle model

    JpGU Meeting 2009 (Chiba, May 2009)

76. *Ozaki, K. and Tajika, E.

    Reconstruction of oceanic chemistry during the Oceanic Anoxic Event from a 1-D biogeochemical model

    Paleoceanography symposium (Tokyo, January 2009)

77. *Ozaki, K. and Tajika, E.

    Occurrence conditions of Ocean Anoxic Events with one dimensional biogeochemical cycle model

    The Geological Society of Japan (Akita, September, 2008)

78. *Ozaki, K. and Tajika, E.

    Theoretical constraints on ocean anoxic events and photic zone anoxia

    JpGU Meeting 2008 (Chiba, May 2008)

79. *Ozaki, K., Tajima, S., and Tajika, E.

    Conditions for oceanic anoxia/euxinia: Constraints from a novel model of oceanic biogeochemistry

    Paleoceanography symposium (Chiba, January 2008)

OUTREACH ACTIVITIES (in Japanese)

1. *Ozaki, K. and Kurokawa, H. “What is a habitable planet? *Astronomy Pub* (Tokyo, October 2020)
2. *Ozaki, K. “Earth’s mechanisms” Science café Ziyu-time (Chiba, October 2018)

3. *Ozaki, K. “Biogeochemists consider climate” *Kappy salon* (Kanagawa, May 2012)
4. *Ozaki, K. “Global warming and oceanic deoxygenation” (Tokai University, October 2010)
5. *Ozaki, K. “Co-evolution of Earth’s environment and life: Past and future” *Kappy salon* (Oiso, April 2009)

NEWS (selected)

1. 2019/7/30 Astrobiology web “Anoxygenic Photosynthesis And The Delayed Oxygenation Of Earth’s Atmosphere”
2. 2019/7/17 Noticias de la Tierra “WHAT DELAYED OXYGENATION OF THE EARTH?”
3. 2019/7/13 iscanews “Researchers Propose a Solution to the Delayed Earth’s Oxygenation”
4. 2019/7/12Notizie scientifiche.it “Cosa ritardo I’ossigenazione della Terra? Nuovo studio fornisce altri indizi”
5. 2019/7/12 ZME SCIENCE “Iron-breathing bacteria might have delayed Earth’s oxygenation for almost one billion years”
6. 2019/7/12 PHYS.ORG “What delayed Earth’s oxygenation?”
7. 2019/7/12 ARCHAEOLOGY NEWS NETWORK “What Delayed Earth’s Oxygenation?”
8. 2019/3/19 ScienceDaily “Carbon monoxide detectors could warn of extraterrestrial life”
9. 2018/7/11 OPTRONICS ONLINE “Links between Earth’s oxygenation and primitive photosynthetic bacteria”
10. 2018/7/10 Zaikei Shimbun ”Why Earth’s oxygenation took >2 billion years?”
11. 2018/3 Nikkei Science “A new hypothesis for the Faint Young Sun Paradox”
12. 2017/12/28 AIR&SPACE “Follow the Energy”
13. 2017/12/22 OggiScienza “Stelle fredde per esopianeti caldi: il paradosso del Sole giovane e debole”
14. 2017/12/18 Science portal “Is the Faint Young Sun Paradox solved? ”
15. 2017/12/17 Nihon Keizai Shimbun “The ancient Earth warmed by methane”
16. 2017/12/13 ASTROBIOLOGY MAGAZINE “COLD SUNS, WARM EXOPLANETS AND METHANE BLANKETS”
17. 2017/12/13 Focus “Il primo global warming della Terra fu causato da microbe fotosintetici”
18. 2017/12/11 NewScientist “Ancient microbes caused Earth’s first ever global warming”

TV/Radio appearance

1. “Oxygen”, Cosmic Front NEXT produced by NHK, 2022
2. “Thinking about half”, produced by NHK, 2022
3. “A Faint Young Sun Problem”, *Cosmic Front NEXT* produced by NHK, 2020
4. “An Asteroid shower and phosphorus cycling”, *Cosmic Front NEXT* produced by NHK, 2020
5. “The age of frozen Earth”, *KYOCERA G-Science* produced by Nippon Broadcasting System, 2008