Media coverage highlights of a recent article led by scientists from Belgium published in **Nature Geoscience** on 30th November 2023.

nature geoscience

Article

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Chicxulub impact winter sustained by fine silicate dust

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Check for updates

Cem Berk Senel[1,2] ✉, Pim Kaskes[2,9], Orkun Temel[1,3,9], Johan Vellekoop[4,5], Steven Goderis[2], Robert DePalma[6,7], Maarten A. Prins[8], Philippe Claeys[2] & Özgür Karatekin[1]

The Chicxulub impact is thought to have triggered a global winter at the Cretaceous-Palaeogene (K-Pg) boundary 66 million years ago. Yet the climatic consequences of the various debris injected into the atmosphere following the Chicxulub impact remain unclear, and the exact killing mechanisms of the K-Pg mass extinction remain poorly constrained. Here we present palaeoclimate simulations based on sedimentological constraints from an expanded terrestrial K-Pg boundary deposit in North Dakota, United States, to evaluate the relative and combined effects of impact-generated silicate dust and sulfur, as well as soot from wildfires, on the post-impact climate. The measured volumetric size distribution of silicate dust suggests a larger contribution of fine dust (~0.8–8.0 μm) than previously appreciated. Our simulations of the atmospheric injection of such a plume of micrometre-sized silicate dust suggest a long atmospheric lifetime of 15yr, contributing to a global-average surface temperature falling by as much as 15°C. Simulated changes in photosynthetic active solar radiation support a dust-induced photosynthetic shut-down for almost 2 yr post-impact. We suggest that, together with additional cooling contributions from soot and sulfur, this is consistent with the catastrophic collapse of primary productivity in the aftermath of the Chicxulub impact.

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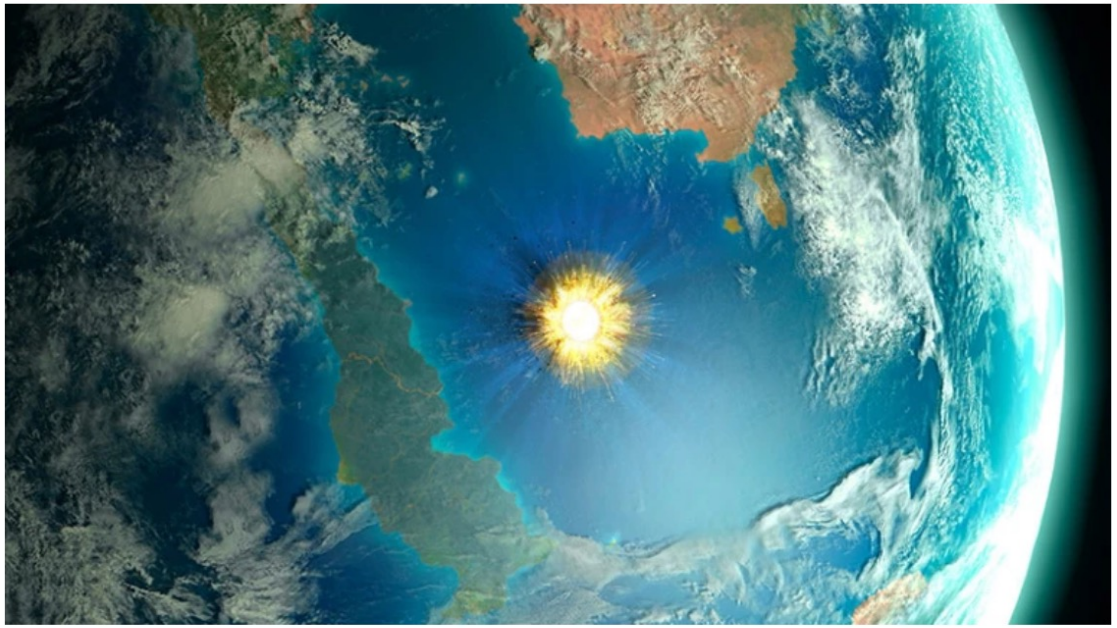
NEWS | 30 October 2023

Did dust from the Chicxulub asteroid impact kill the dinosaurs?

Fine particles kicked up by the collision could have blocked out the Sun for years, resulting in global cooling and disastrous consequences for ecosystems.

Katharine Sanderson



The asteroid impact (illustration) produced the Chicxulub crater in what is now Mexico. Credit: Mark Garlick/Science Photo Library

Dust might have been responsible for the deadly dinosaur-killing global winter that came after an asteroid slammed into Earth 66 million years ago, finds a study published on 30 October in *Nature Geoscience*[1].

A team of geoscientists led by Cem Berk Senel at the Royal Observatory of Belgium in Brussels reinvestigated the aftermath of the impact that formed Mexico's Chicxulub crater — a collision that wiped out the non-avian dinosaurs and much of life on Earth.

Our paper has been selected for "**highlighting**" in Nature Geoscience.
A news about our study has been released in Nature.

Global media coverage | The data is based on Altmetric

Altmetric has tracked 330 of our media interviews/mentions, including 222 news outlets, such as:

CNN, New York Times, Reuters, The Guardian, The Washington Post, La Libre, The Telegraph, France24, Bangkok Post
BBC, Fox News, India Today, The Post, Frankfurter, ABC News Australia, The Standard Hong Kong, China Daily, …

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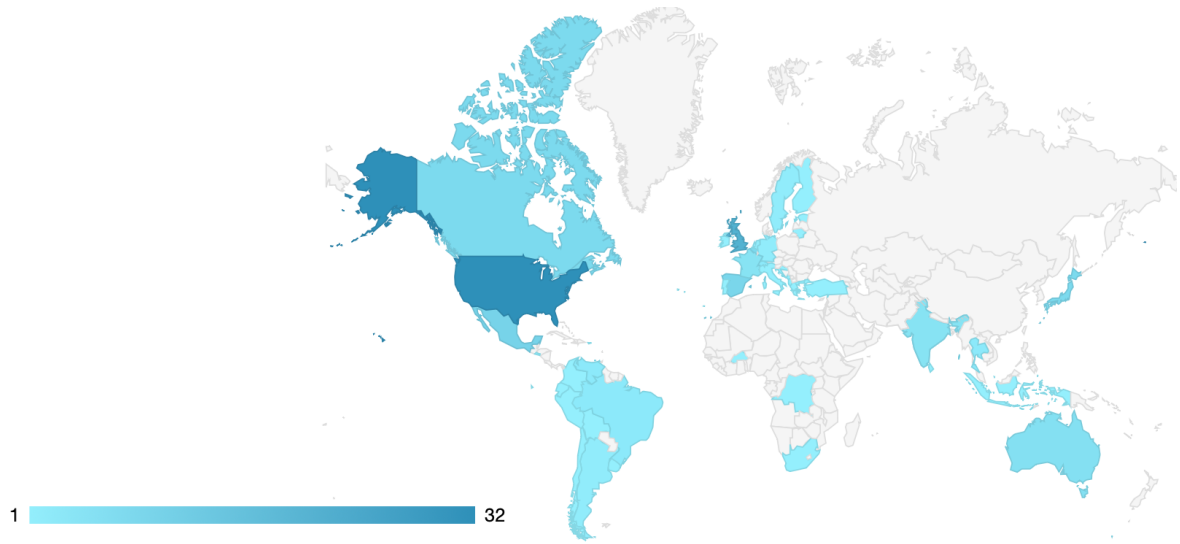

Geographical breakdown

Country	Count	As %
United States	32	10%
United Kingdom	21	6%
Mexico	10	3%
Spain	9	3%
Belgium	8	2%
Canada	8	2%
Japan	8	2%
Australia	6	2%
France	5	2%
Other	51	15%
Unknown	172	52%

Demographic breakdown

Type	Count	As %
Members of the public	244	74%
Scientists	68	21%
Science communicators (journalists, bloggers, editors)	15	5%
Practitioners (doctors, other healthcare professionals)	3	<1%

Examples: In PRESS

Media coverage highlights of a recent article led by scientists from Belgium published in **Nature Geoscience** on 30th November 2023.

BBC

Did dust wipe out the dinos?

Scientists in Belgium think they might have figured out what wiped out most of the dinosaurs from Earth - dust.

The Washington Post

"An apocalyptic dust plume killed off the dinosaurs, study says"

Examples: In NEWS

Media coverage highlights of a recent article led by scientists from Belgium published in **Nature Geoscience** on 30th November 2023.

Asteroid that doomed the dinosaurs halted a key process for life on Earth, scientists say

By Katie Hunt, CNN
3 minute read · Updated 11:29 PM EDT, Tue October 31, 2023

Dust from asteroid impact drove the dinosaur extinction, scientists say

November 11, 2023 - 8:12PM sky news .COM.AU

In Science Magazines

Media coverage highlights of a recent article led by scientists from Belgium published in **Nature Geoscience** on 30th November 2023.

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SOLAR SYSTEM

Asteroid dust found at Chicxulub Crater confirms cause of dinosaurs' extinction

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Look up! The Leonid meteor shower peaks this weekend

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Ancient 'Black Box' Hints at What Really Killed The Dinosaurs

NATURE 31 October 2023 By FELICITY NELSON

(Stocktrek Images/Getty Images)

Fine dust suspended in the atmosphere may have played a significant role in the extinction of dinosaurs after all.

Newsweek

NewScientist

SCIENTIFIC AMERICAN

Smithsonian MAGAZINE

YouTube channels

Media coverage highlights of a recent article led by scientists from Belgium published in **Nature Geoscience** on 30th November 2023.

The lost continent of Argoland has been found (and other science news of the week)

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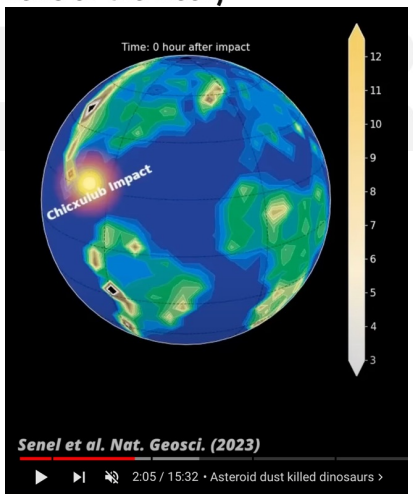

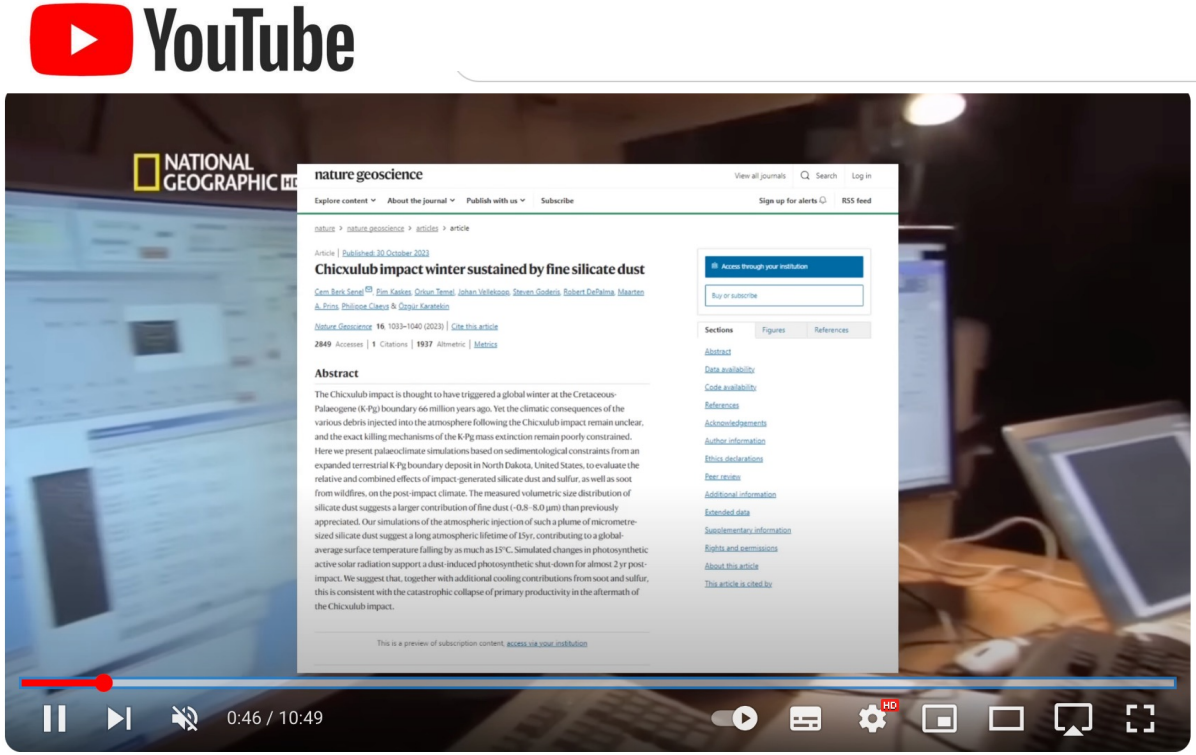

NASA раскрыла настоящую причину гибели динозавров. Это не сера!

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In social media

Media coverage highlights of a recent article led by scientists from Belgium published in **Nature Geoscience** on 30th November 2023.

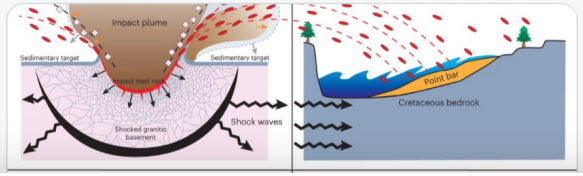
Observatory.be @ORB_KSB · Oct 31

Dust generated by the #Chicxulub impact could have played a major role in global climate cooling and the disappearance of the #dinosaurs. Conclusion of a new study on @NatureGeosci led by @cemberksenel91, of the @ORB_KSB . 👉 astro.oma.be/en/dust-played...

1 6 5 744

Observatory.be @ORB_KSB · Oct 31

Here is the @NatureGeosci article 📜👁️



Institute of Natural Sciences Belgium @nat_sciences_be · Oct 30

Fijn stof dat vrijkwam bij de #Chicxulub-meteorietinslag heeft waarschijnlijk een dominante rol gespeeld bij de afkoeling van het klimaat, de verstoring van fotosynthese en het massale uitsterven van het leven op onze planeet 66 miljoen jaar geleden naturalsciences.be/nl/wetenschap/...

Observatory.be and 2 others

7 13 1K

FWO @FWOVlaanderen · Oct 31

'Fijnstof luidde einde dinosauriërs in', nieuw onderzoek @NatureGeosci van onder andere Koninklijke Sterrenwacht van België (ORB),@VUBrussel, @nat_sciences_be en @KU_Leuven @belspo (Afbeelding: Reconstructie door Mark A. Garlick) fwo.be/nl/nieuws/pers...

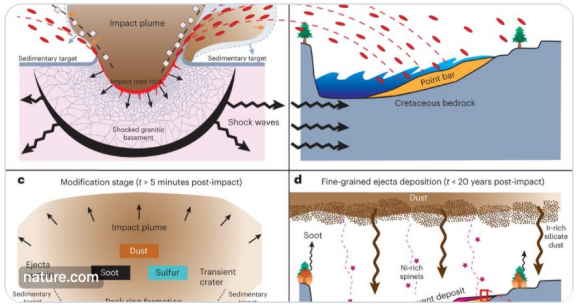
You and 3 others

7 19 3.7K

Archaeology, Environmental Changes & Geo-Chemistry reposted

Philippe Claeys VUB @ClaeysVub · Oct 30

New paper explains dino's extinction. Chicxulub impact winter sustained by fine silicate dust | Nature Geoscience



2 24 78 5.8K

Belgian Climate Centre @climatecentrebe · Oct 31

New research, published in @NatureGeosci, suggests that #finedust from the #Chicxulub meteorite impact played a dominant role in global climate cooling.

Led by Belgium's Royal Observatory @ORB_KSB researcher Cem Berk Senel @cemberksenel91

astro.oma.be/en/dust-played...

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Belgian Climate Centre @climatecentrebe · Oct 31

With important contributions by @AMGC_VUB's @PimKaskes @GoderisSteven & @ClaeysVub, @ORB_KSB's Orkun Temel & @OzgurKaratekin, @KU_Leuven's Johan Vellekoop, and @VU_EarthScience.

Funding by @belspo & @FWOVlaanderen. Support by @nat_sciences_be, Show more

1 3 64

Belgium. Embracing openness
@Belgium

🔬 New study published in @NatureGeosci in which researchers of @KU_Leuven, @VUBrussel, @ORB_KSB and @nat_sciences_be took part.

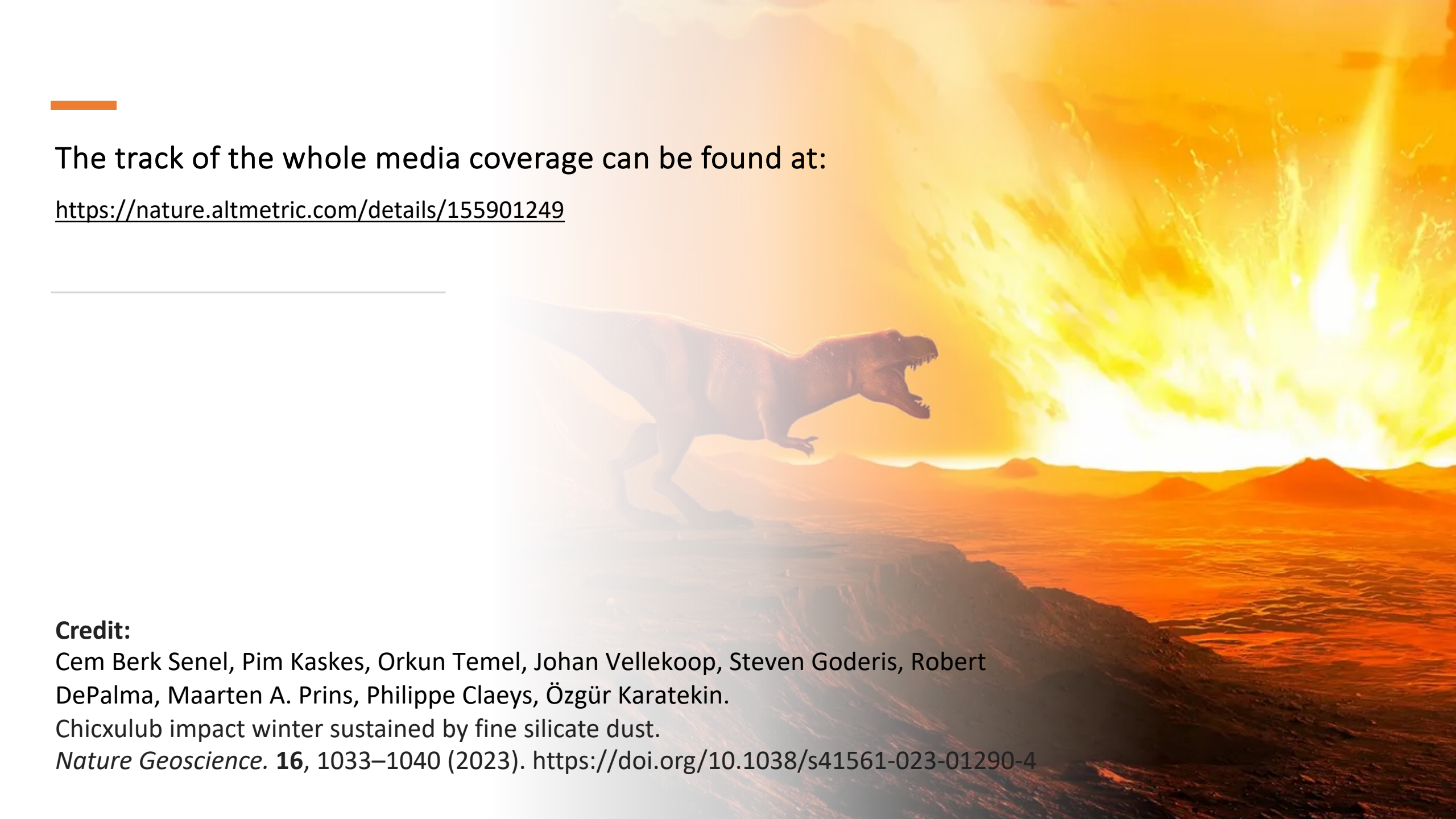
🌍 It found a giant dust cloud was crucial to the extinction of dinosaurs 66 million years ago.

💪 Belgian research: driving science forward.

8:00 AM · Nov 6, 2023 · **969** Views

The track of the whole media coverage can be found at:

https://nature.altmetric.com/details/155901249



Credit:
Cem Berk Senel, Pim Kaskes, Orkun Temel, Johan Vellekoop, Steven Goderis, Robert DePalma, Maarten A. Prins, Philippe Claeys, Özgür Karatekin.
Chicxulub impact winter sustained by fine silicate dust.
Nature Geoscience. **16**, 1033–1040 (2023). https://doi.org/10.1038/s41561-023-01290-4