

Earth to Sky – Electronic Workshop

Introduction to Communicating Climate Change

February / March 2011



Global Temperature
Anomaly 2000 -2009

February 28th Webinar:
*“Climate Change is Real - An Introduction
to the Earth to Sky Community of Practice”*

Presenters: Anita Davis, John Morris,
Ruth Paglierani, Sandy Spakoff

GoToWebinar ID#: 538-619-977
Phone Number: 1-805-309-0020
Access code: 395-809-558



Communicating about Climate Change



Bringing Science to Life...



92.7% - First Earth to Sky Event

63.9% - Have not yet developed a product on CC

51% - Have rec'd a post-graduate degree

43% Natural; 3% Cultural; 54% Both Natural/Cultural

Communicating about Climate Change



One of the first things to understand is that climate science has evolved greatly in recent years

Scientific consensus about climate change has also evolved.

Today, climate scientists are almost in complete agreement that unprecedented climate changes are occurring and that human activities are a reason why.



Hand-drawn maps...



Super Computers



Satellites - High Technology

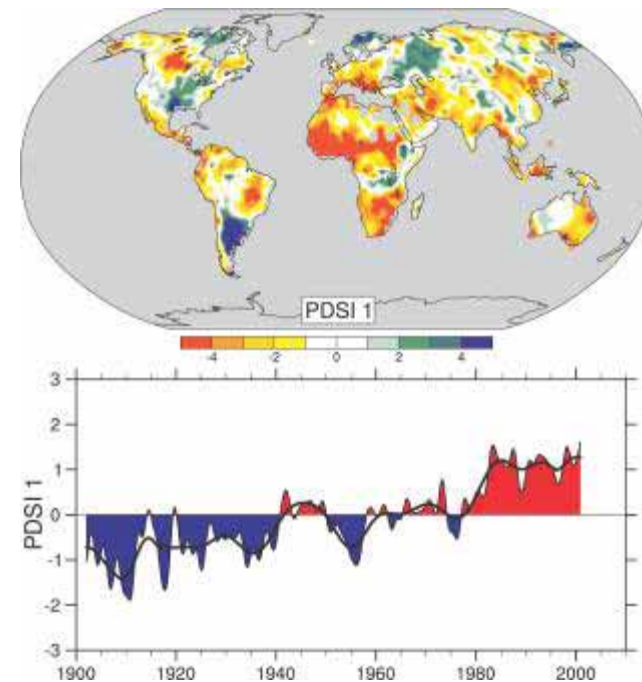




Intergovernmental Panel on Climate Change, Assessment, 2007

Scientists and delegates from 194 countries worldwide agree –

“Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level.”



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“The Dept. of Interior policy is Climate Change is real, and it’s anthropogenic. We’re beyond any debate about that. So, we can talk about it openly.

Now whether or not you can say this particular thing on the ground is caused by climate change, that’s a different story altogether. But, it’s our official policy.”

- Jon Jarvis, February 2nd, 2010



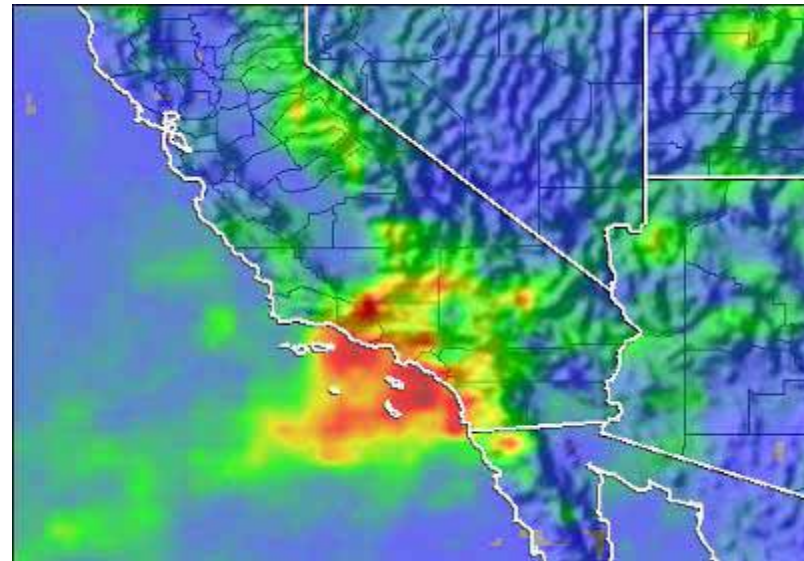
A scenic landscape photograph of a mountain valley. The foreground is filled with evergreen trees, some with snow on their branches. In the middle ground, a valley floor is visible, possibly containing a small town or village. The background features several large, rugged mountains with significant snow cover under a clear blue sky. A bright sun is positioned in the upper left quadrant, creating a starburst effect and casting long, soft shadows across the scene.

Impacts from climate disruption are already occurring.

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Changes are evident: Coastal Erosion, Extreme Storm events, Flooding, Increased Wildland Fire, Sea Level Rise, Droughts ...



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Change is happening so fast – within **my** lifetime...



Portage Glacier - 1976



Portage Glacier - 2006



Bear Glacier 2005

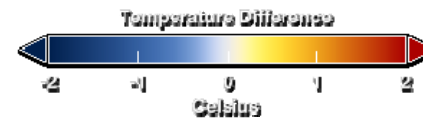
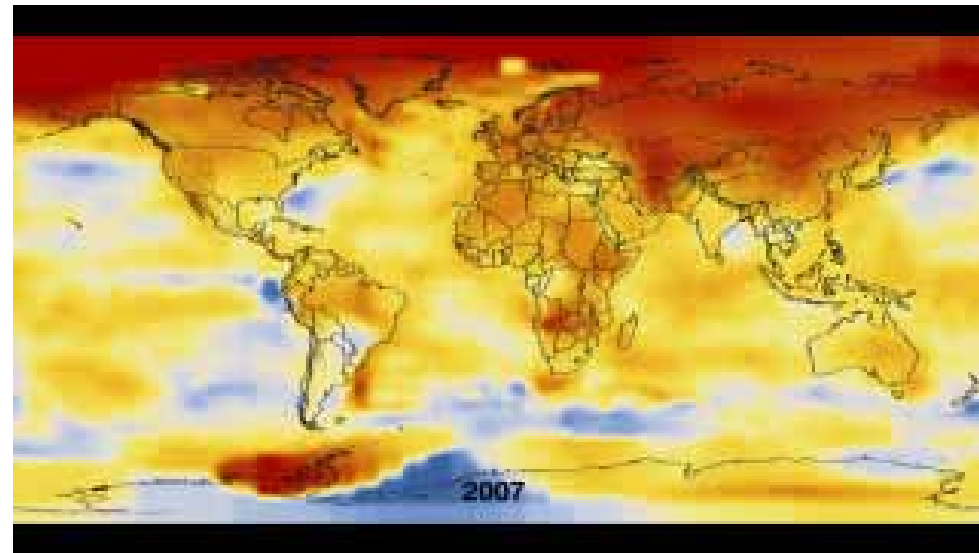
Kenai Fjords National Park



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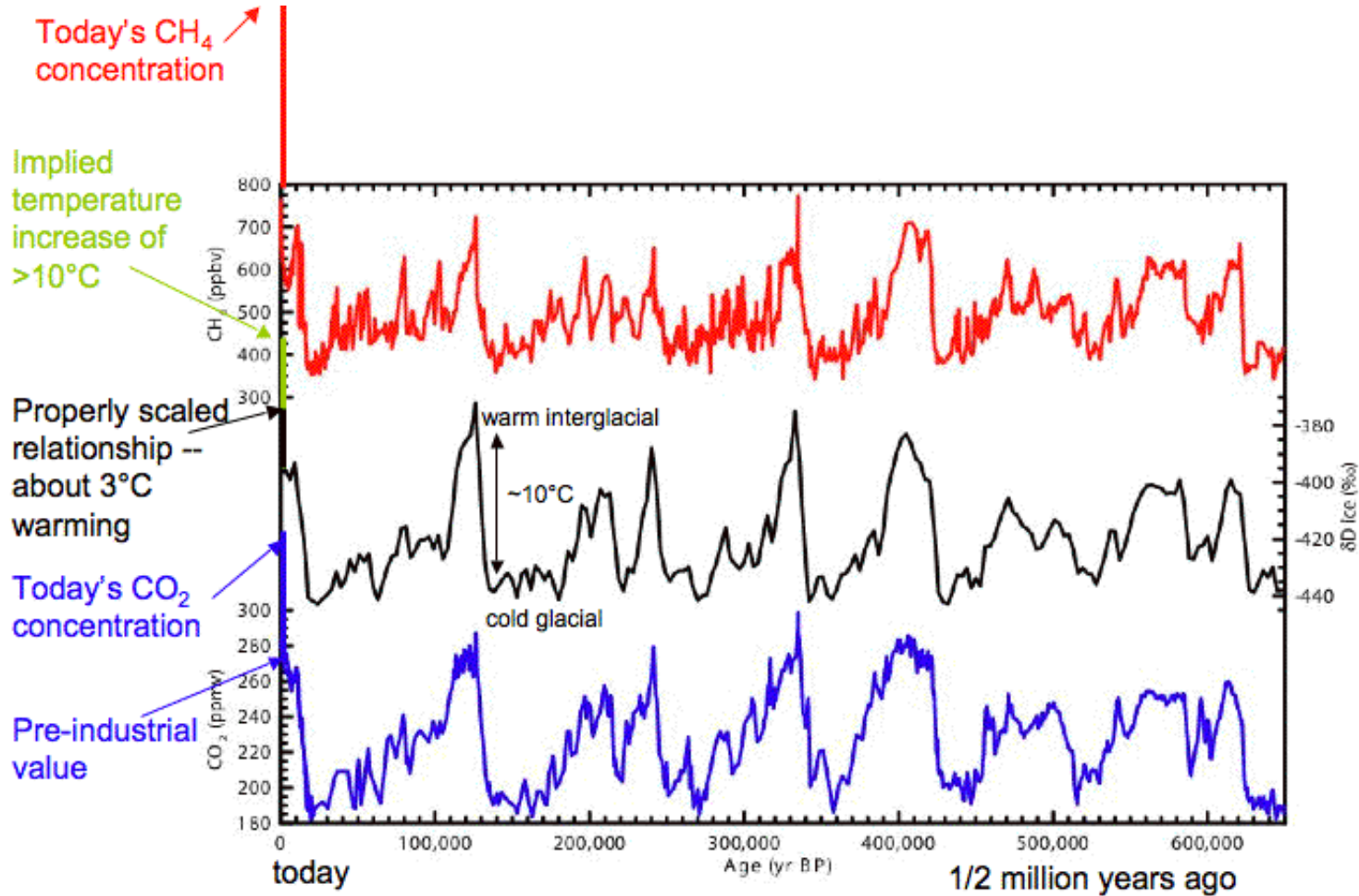
“Gloom & doom”
– Less is More!





Human activities are causing climate change.

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Methane, temperature (from hydrogen isotope ratios ("δD") and **carbon dioxide** from the Dome C Ice core. (EPICA Project members, 2006).

What is air made of?

Nitrogen, N_2 - 78%

Oxygen, O_2 - 21%

Other trace gases - 1%

Water Vapor H_2O

Carbon Dioxide CO_2

Argon

Methane CH_4

Nitrous Oxide N_2O

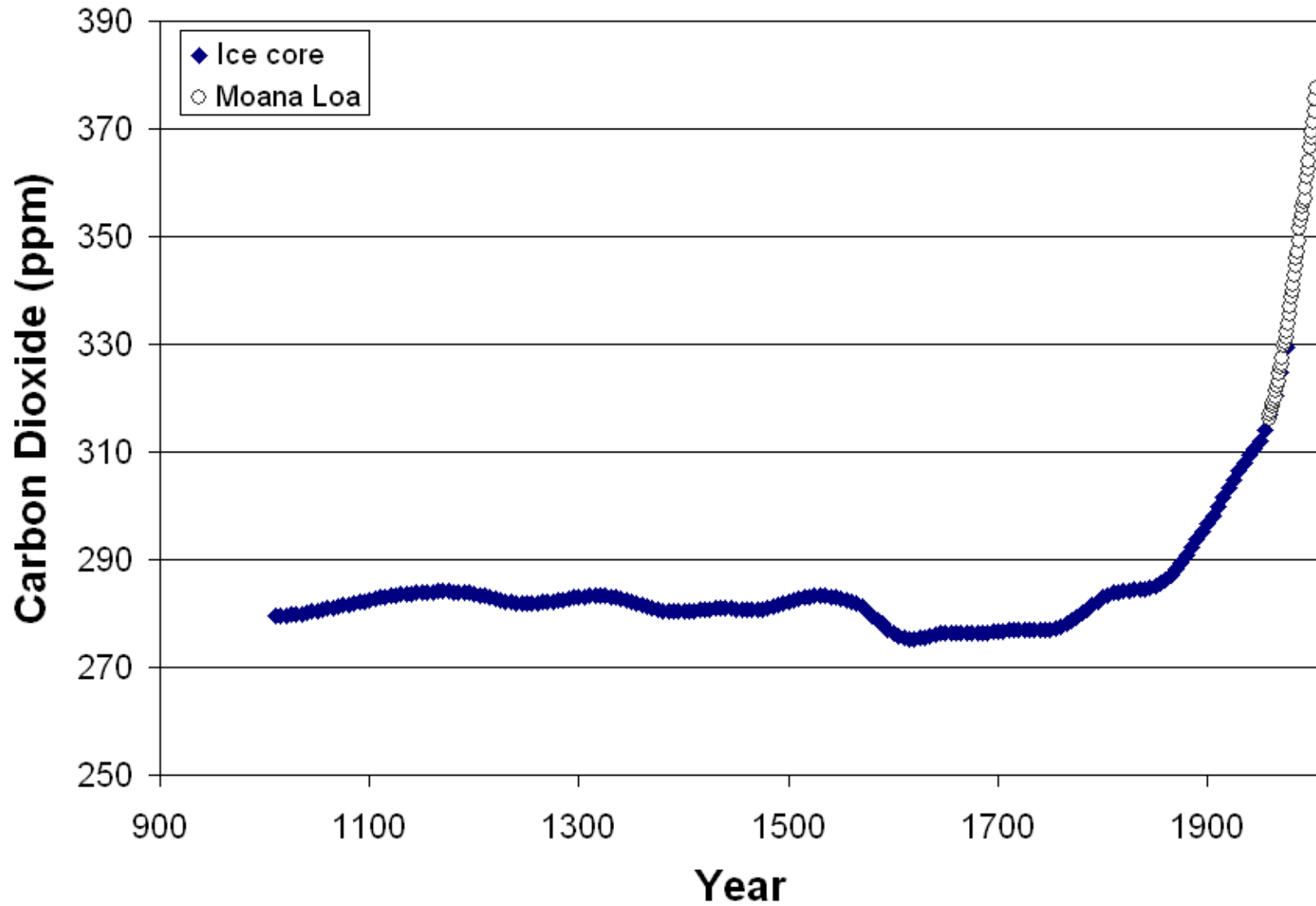
Ozone O_3

Chlorofluorocarbons CFCs

Hydrochlorofluorocarbons HCFCs

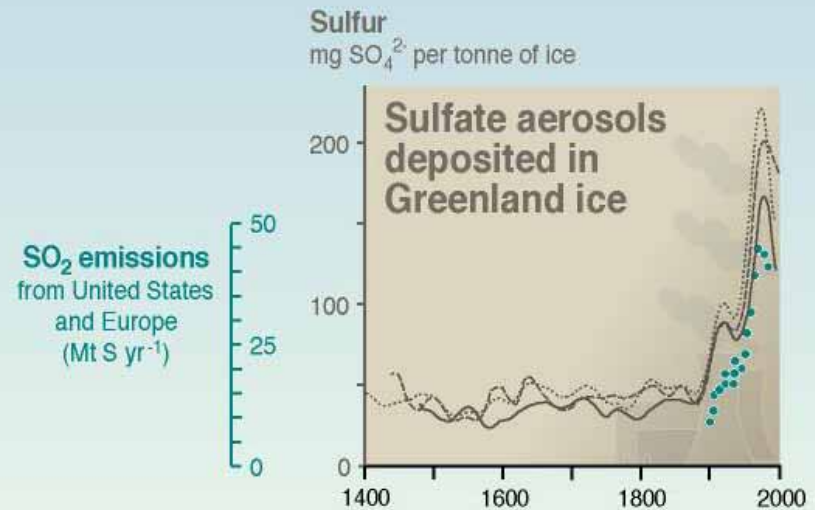
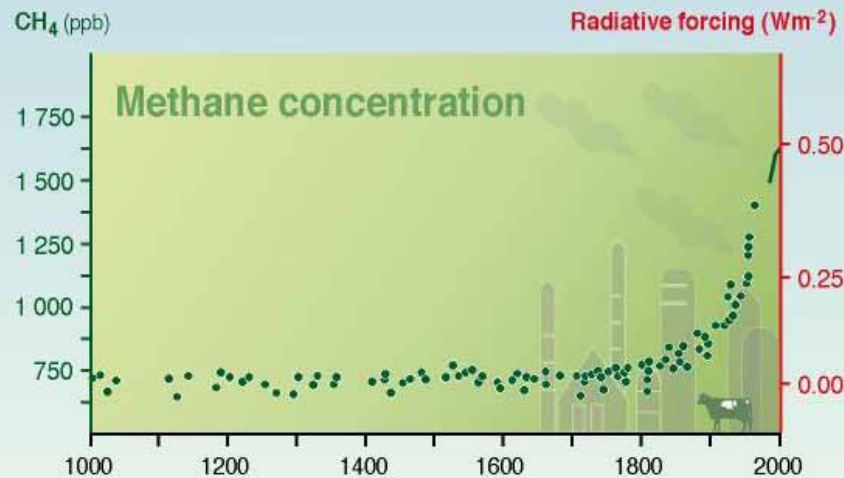
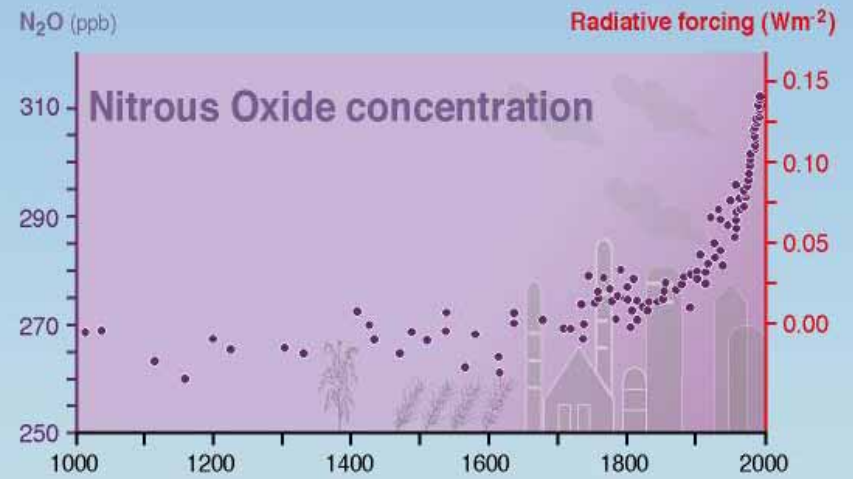
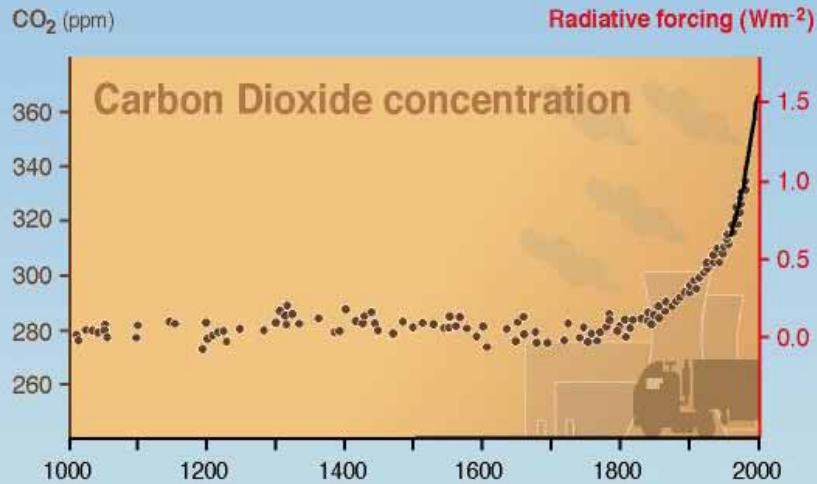
Hydrofluorocarbons HFCs

The historical CO₂ record



Etheridge et al. (1998)
Keeling and Whorf (2005)

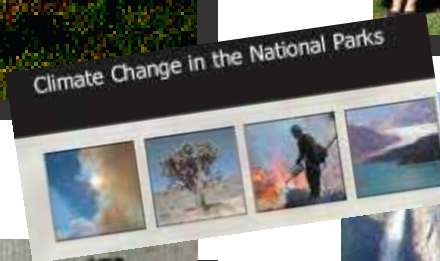
Indicators of the human influence on the atmosphere during the Industrial era





We aren't just lying around – we're doing something about it.

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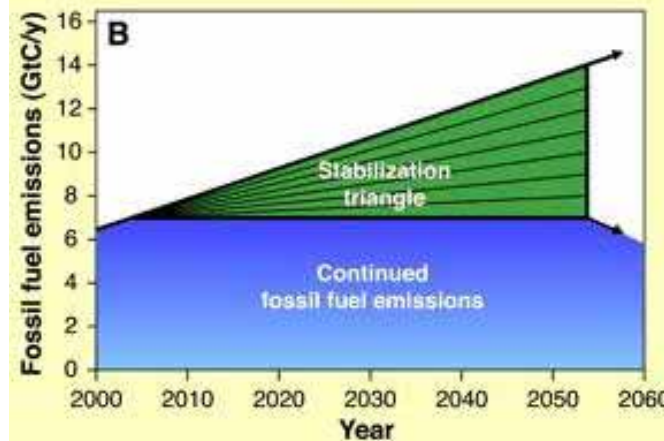


There are many things we are doing to respond:

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Humanity already possesses the fundamental scientific, technical, and industrial know-how to solve the carbon and climate problem for the next half-century. The technologies now exist to meet the world's energy needs over the next 50 years and limit atmospheric CO₂ to a trajectory that avoids a doubling of the pre-industrial concentration.



Many of the technologies are already implemented somewhere at full industrial scale. Although no element is a credible candidate for doing the entire job (or even half the job) by itself, the portfolio as a whole is large enough that not every element has to be used.

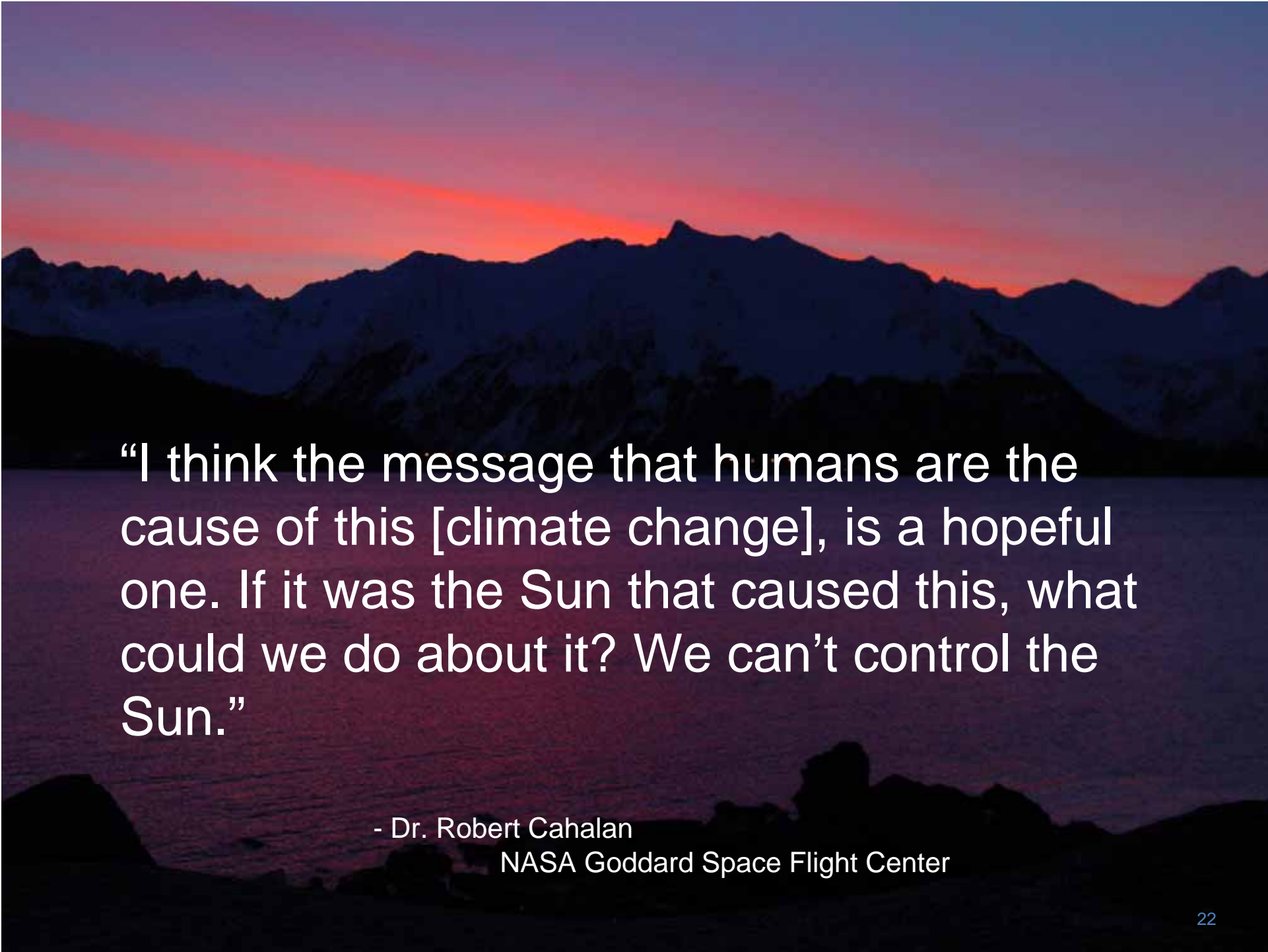
What communicators can do...



We can raise awareness about the significance of our actions – by having informed conversations.

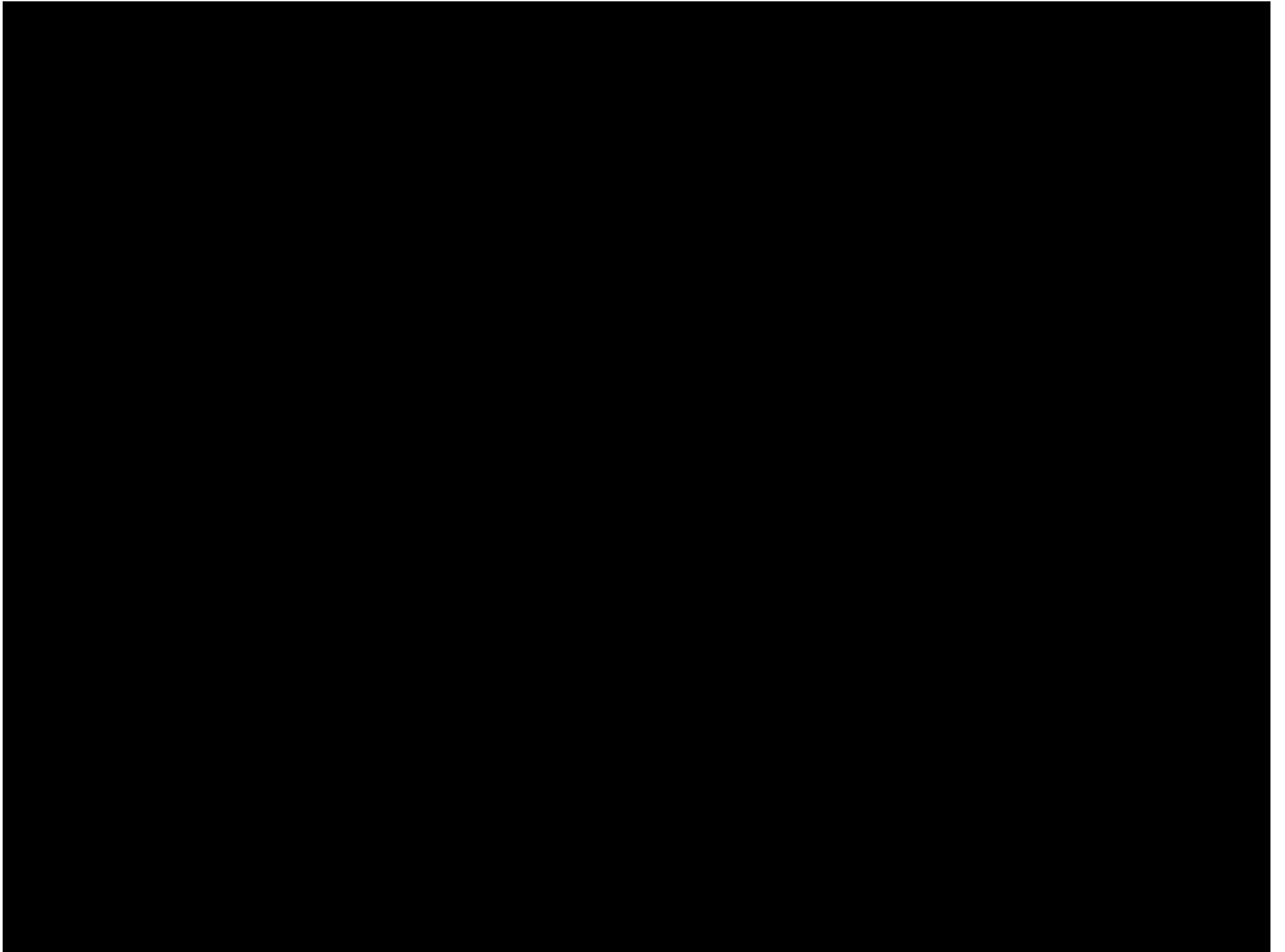


**The challenge ... to convey a
message of Hope –
one that inspires action
rather than despair?**



“I think the message that humans are the cause of this [climate change], is a hopeful one. If it was the Sun that caused this, what could we do about it? We can't control the Sun.”

- Dr. Robert Cahalan
NASA Goddard Space Flight Center



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Next Webinar – Friday March 4th, 2pm EST:

*“The Story of the Carbon Cycle –
The Influence of Humanity on Earth’s Climate”*

Presenter: Dr. Peter Griffith, Biospheric Sciences Branch
NASA Goddard Space Flight Center