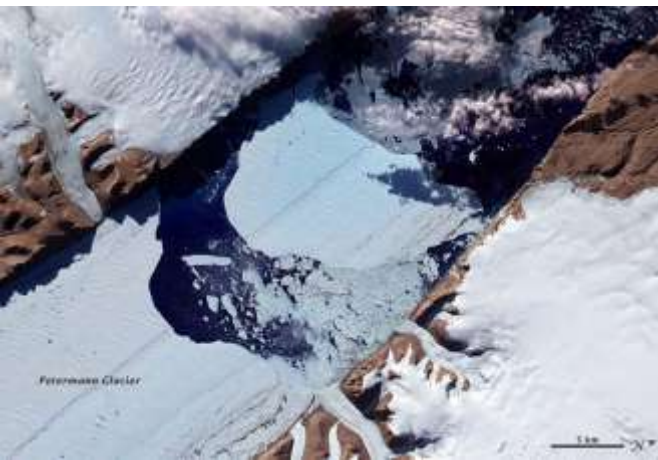




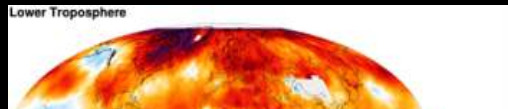
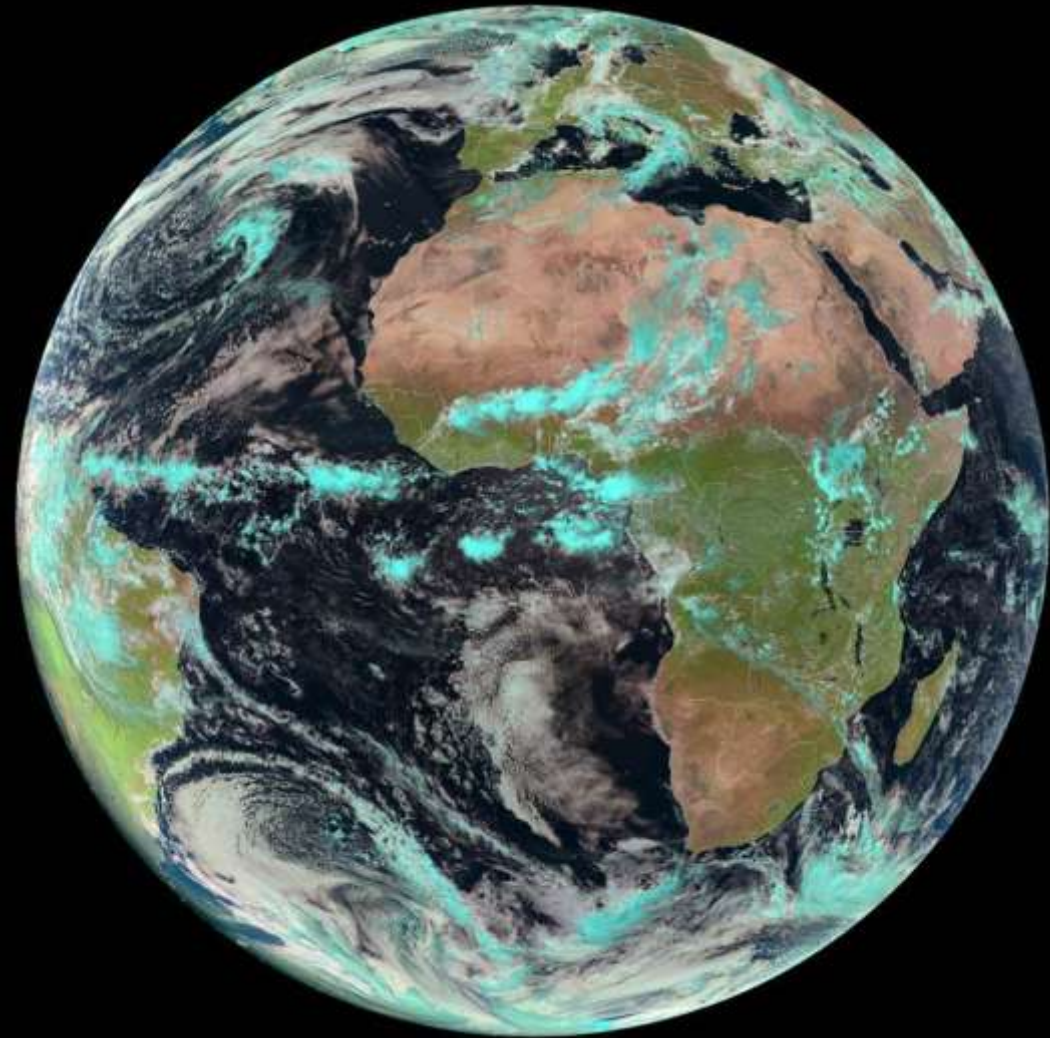
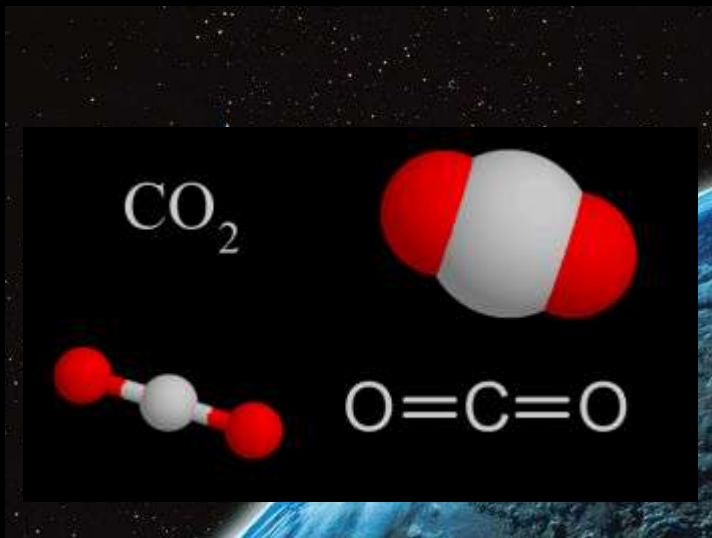
KLIMATICKÁ ZMENA V GLOBÁLNEJ PERSPEKTÍVE

Jozef Pecho
Ústav fyziky atmosféry AV ČR, Praha

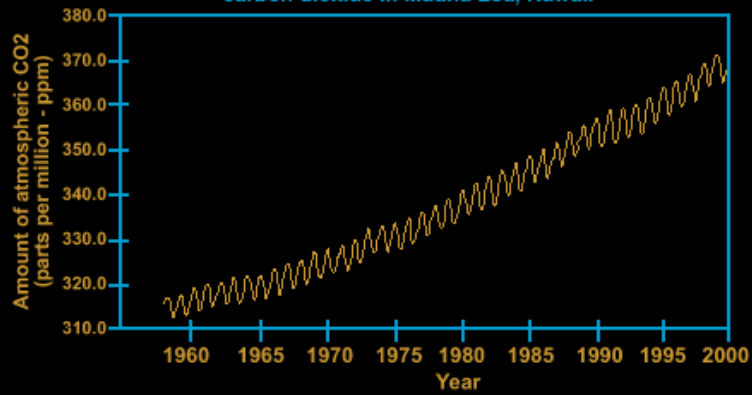


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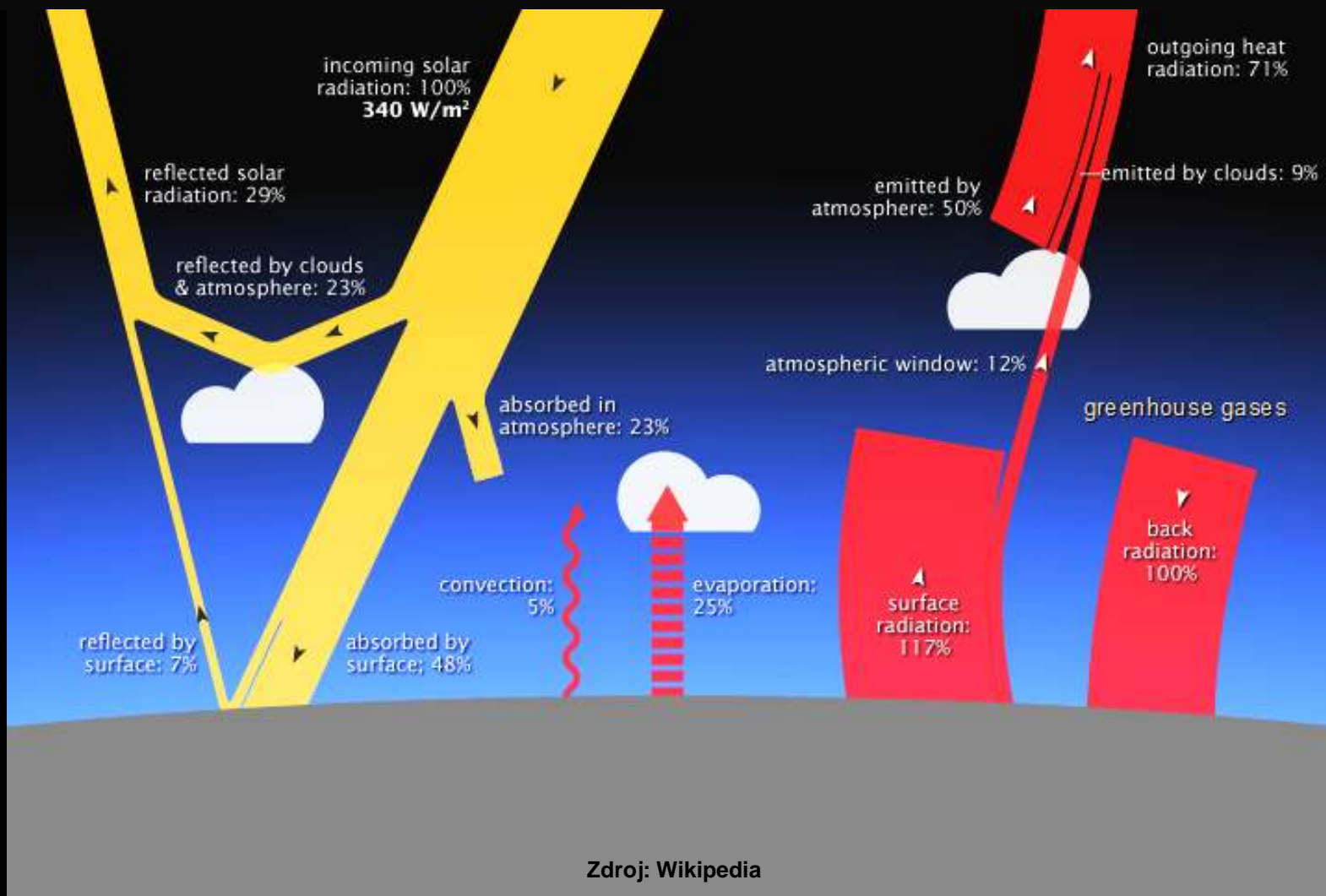




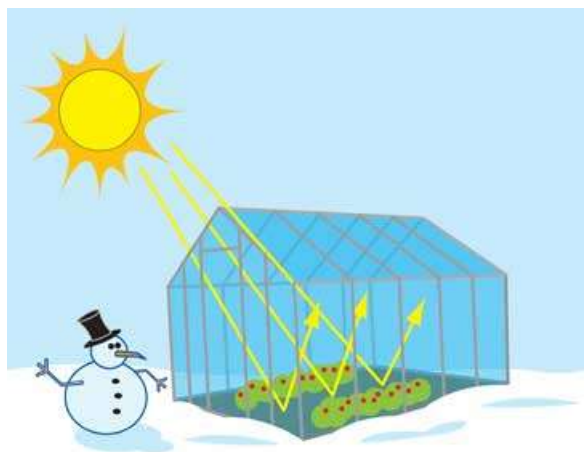
Keeling Curve: Measurements of atmospheric carbon dioxide in Mauna Loa, Hawaii



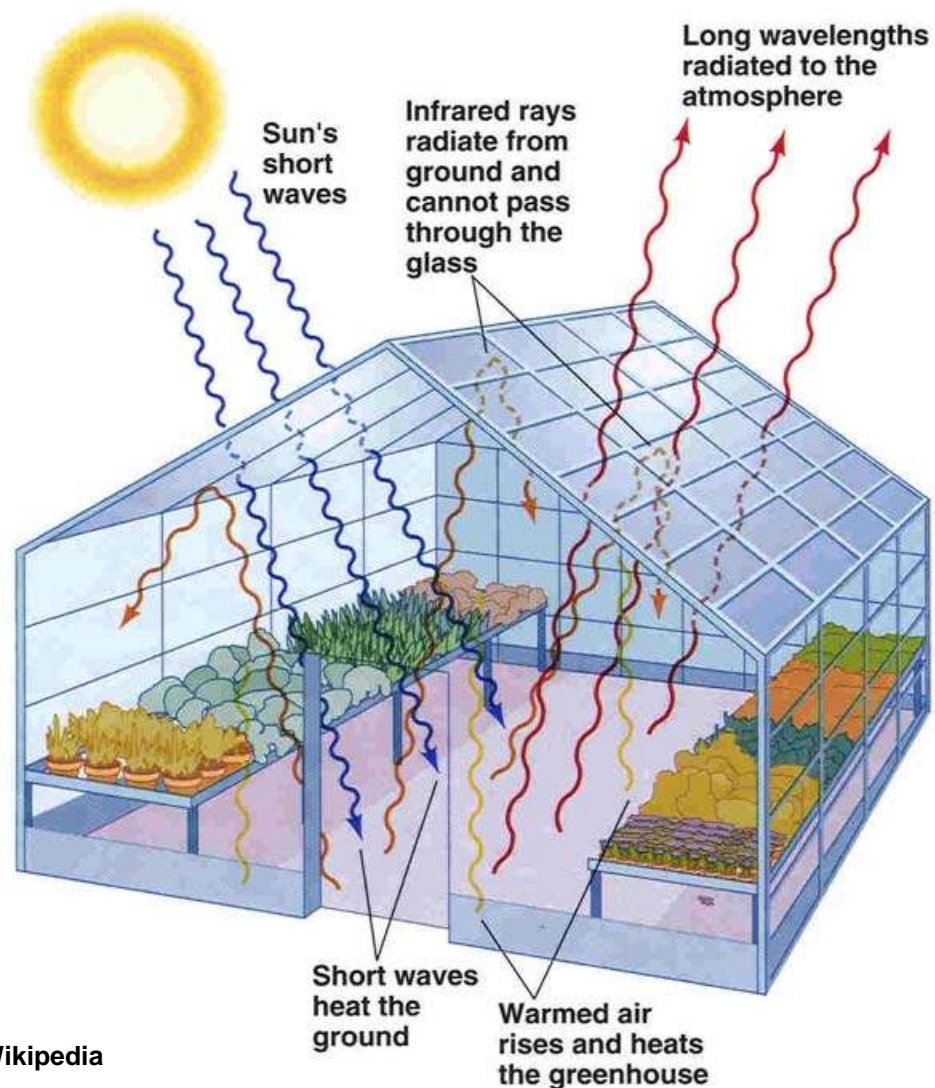
ZEM AKUMULUJE ČORAZ VIAC TEPLA



ZEM AKUMULUJE ČORAZ VIAC TEPLA

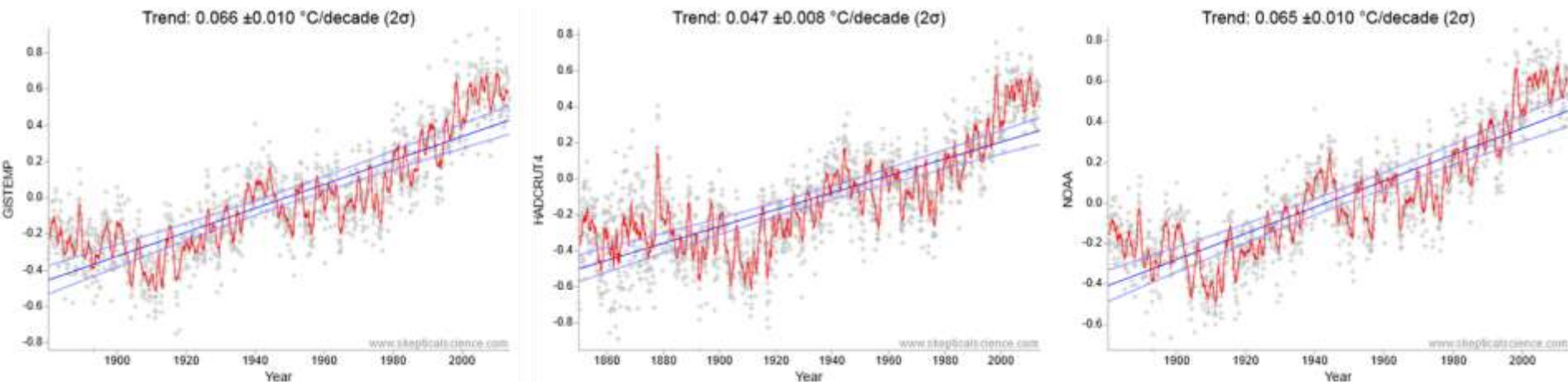


Zdroj: Wikipedia

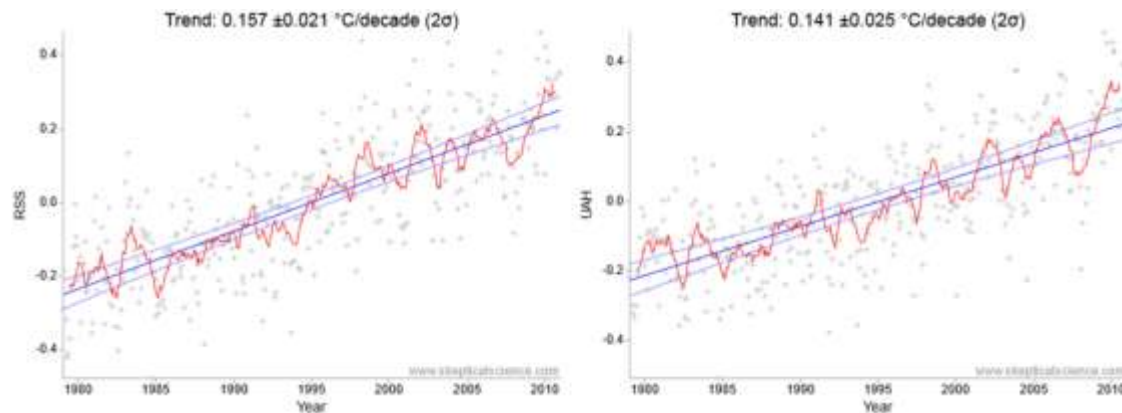


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Priemerná globálna teplota – pozemné merania

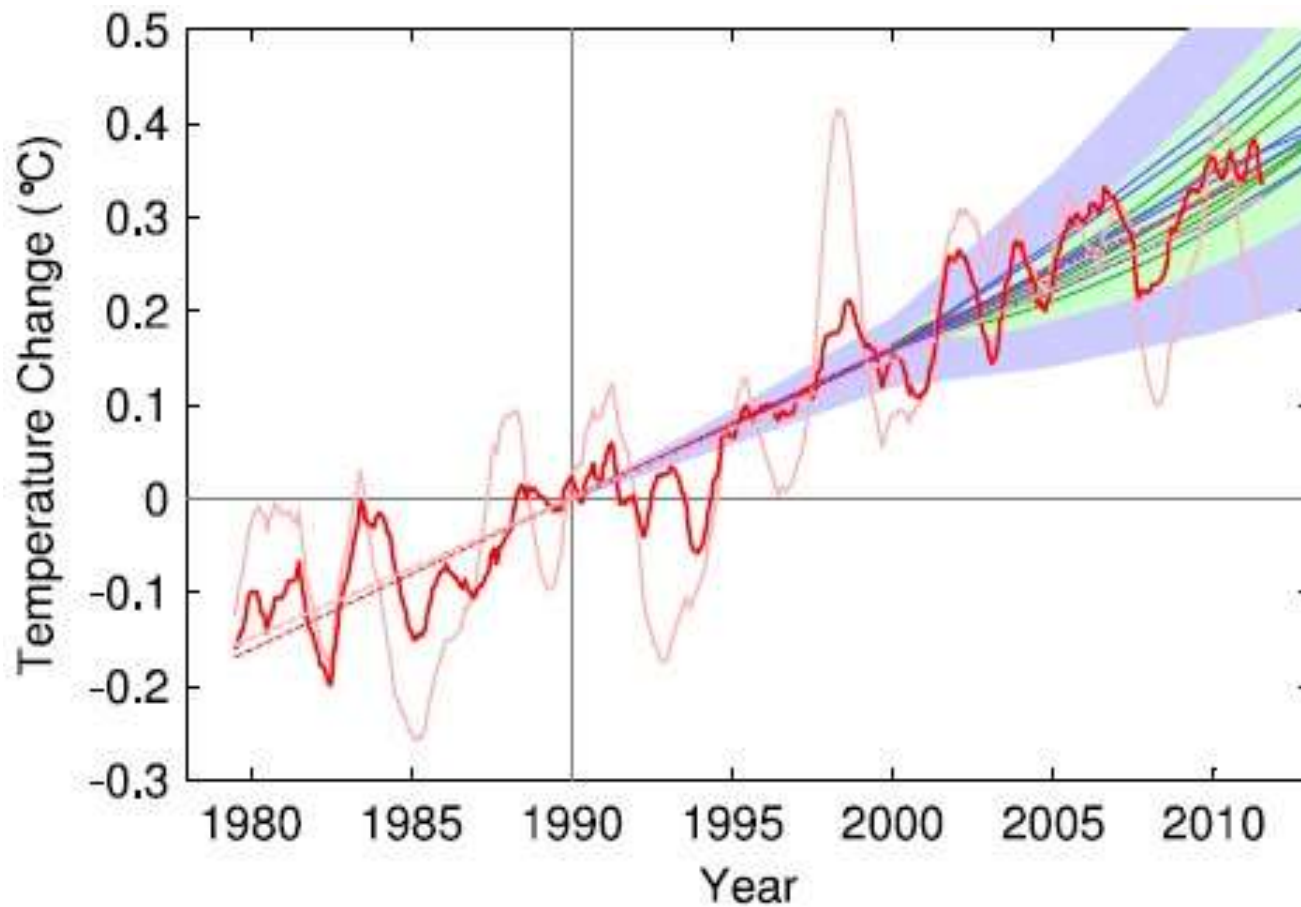


Priemerná globálna teplota – družicové merania



Zdroj: Skeptical Science

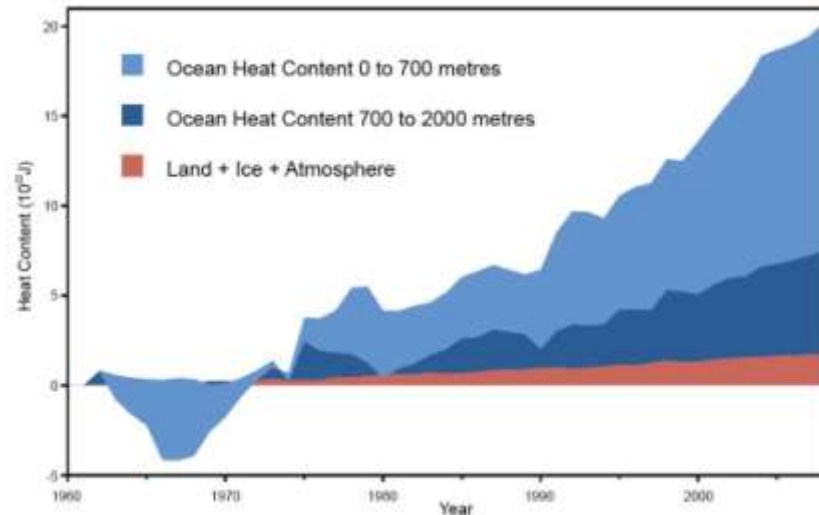
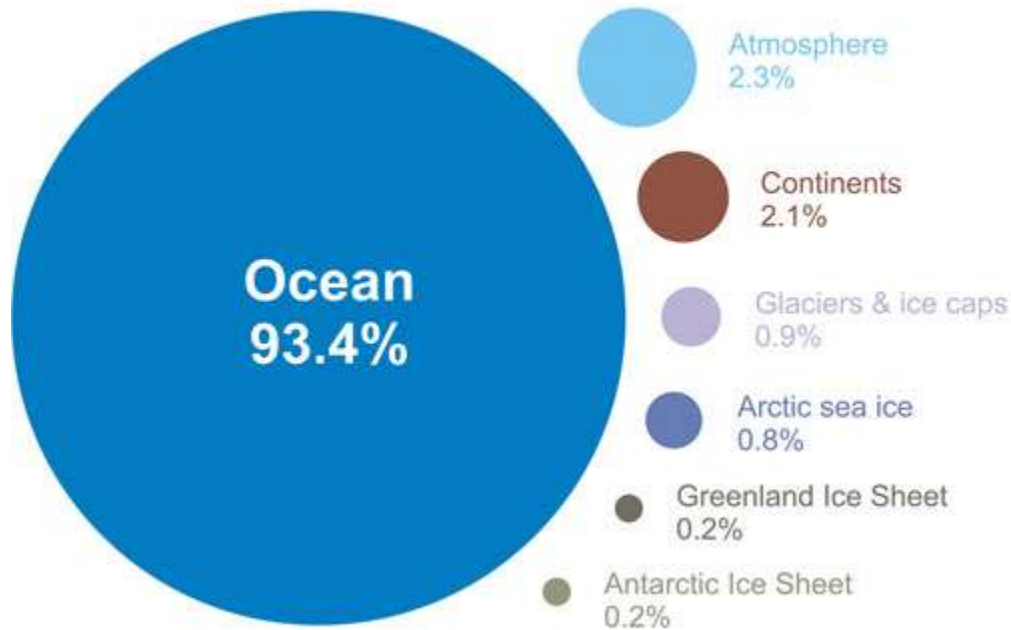
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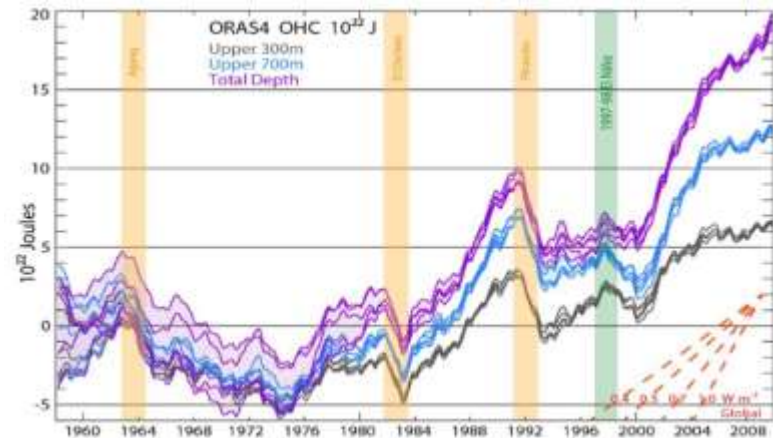
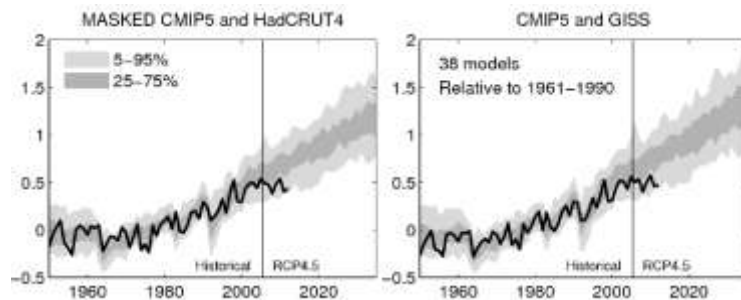
Zdroj: Rahmstorf et al 2012

ZEM AKUMULUJE ČORAZ VIAC TEPLA

Where is global warming going?



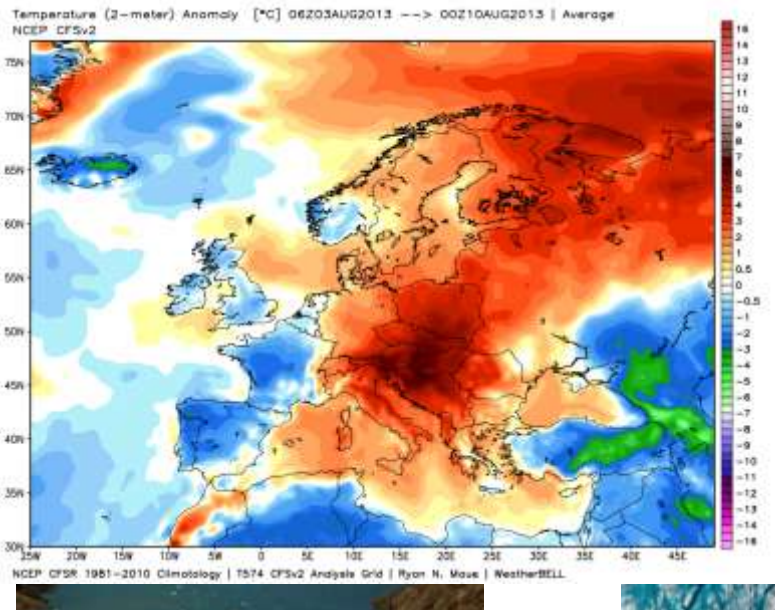
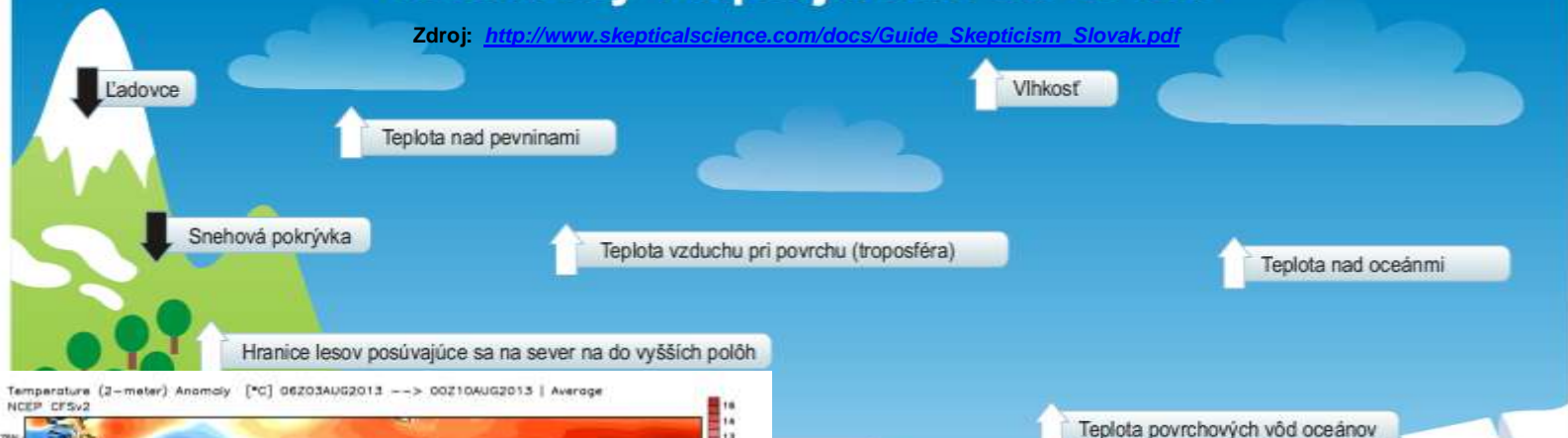
Zdroj: Nuccitelli et al. 2012



PREJAVY GLOBÁLNEHO OTEPLŔOVANIA

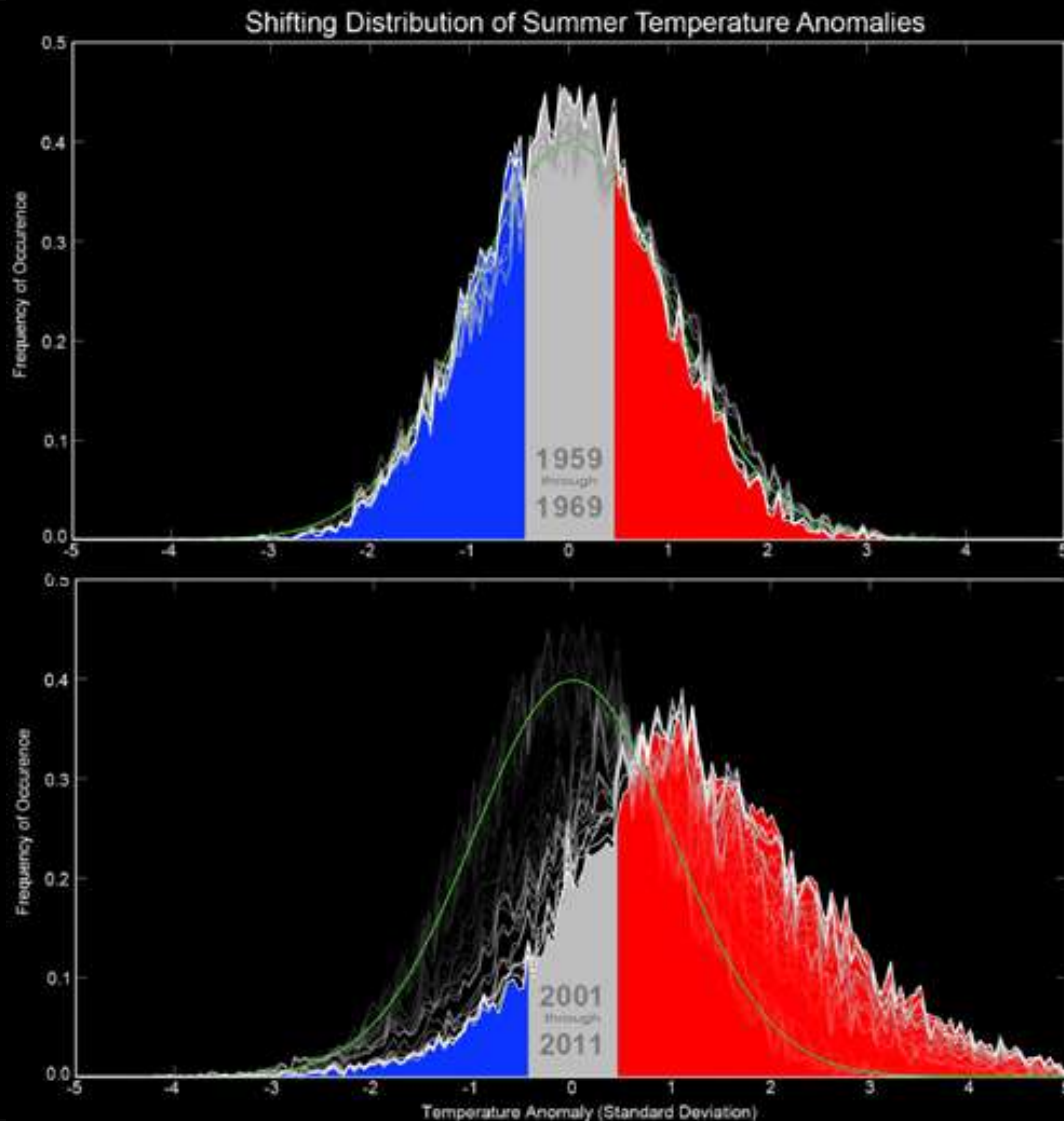
Indikátory otepľujúceho sa sveta

Zdroj: http://www.skepticalscience.com/docs/Guide_Skepticism_Slovak.pdf



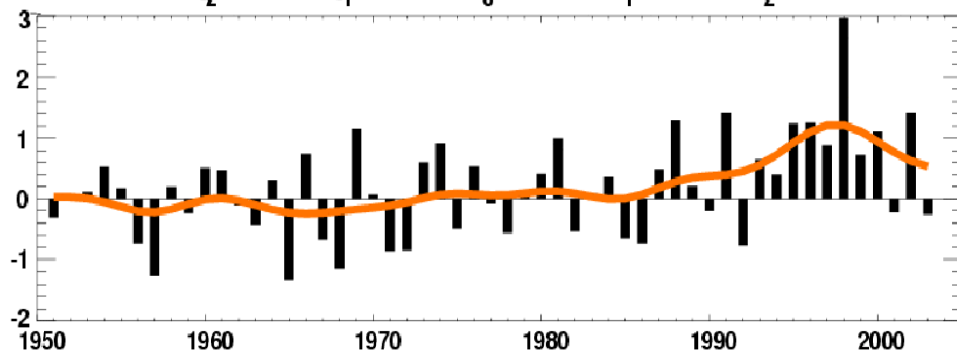
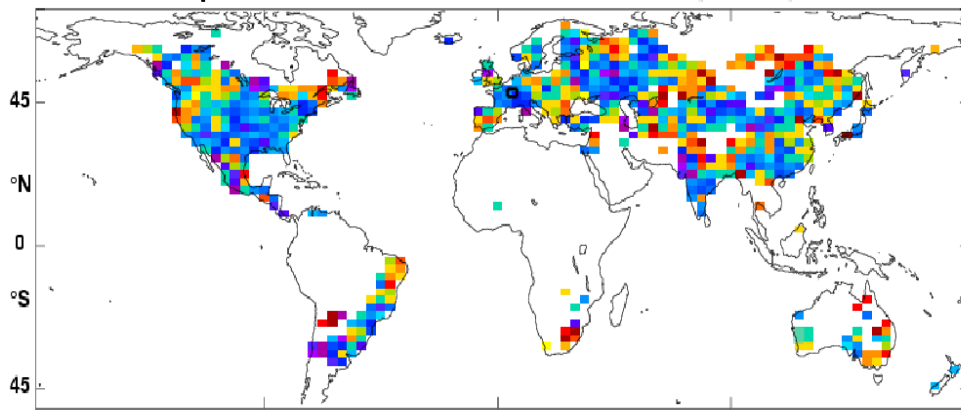
PREJAVY GLOBÁLNEHO OTEPL'OVANIA

Source: Hansen et al. 2012

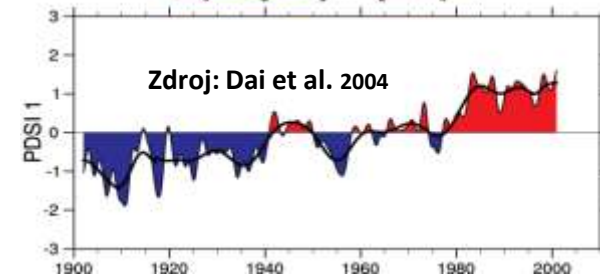
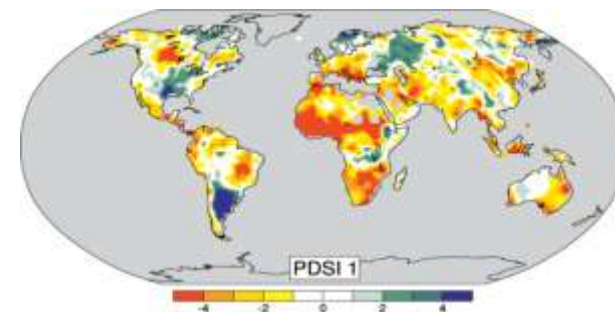
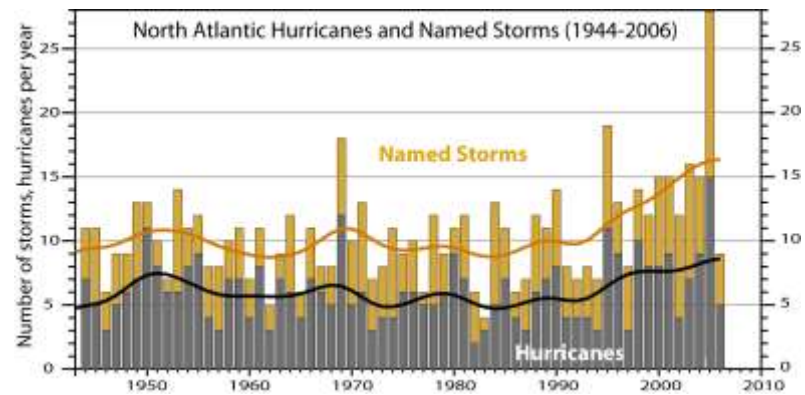


PREJAVY GLOBÁLNEHO OTEPL'OVANIA

Trend per % decade 1951-2003 contribution from very wet days

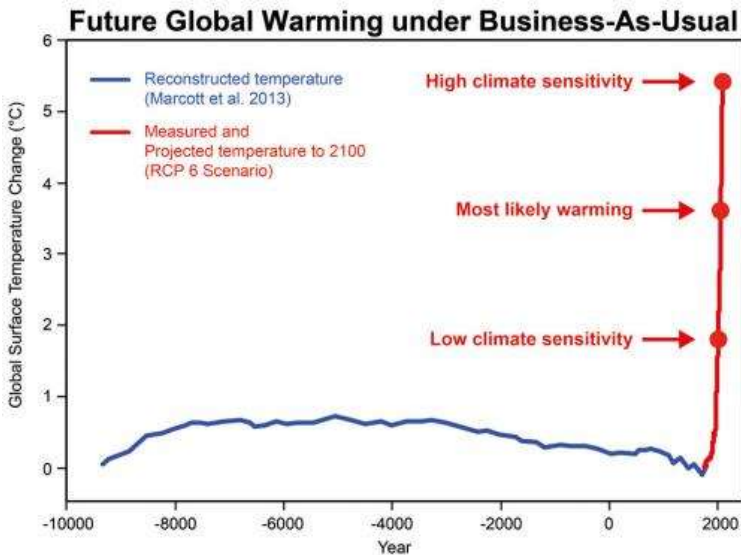
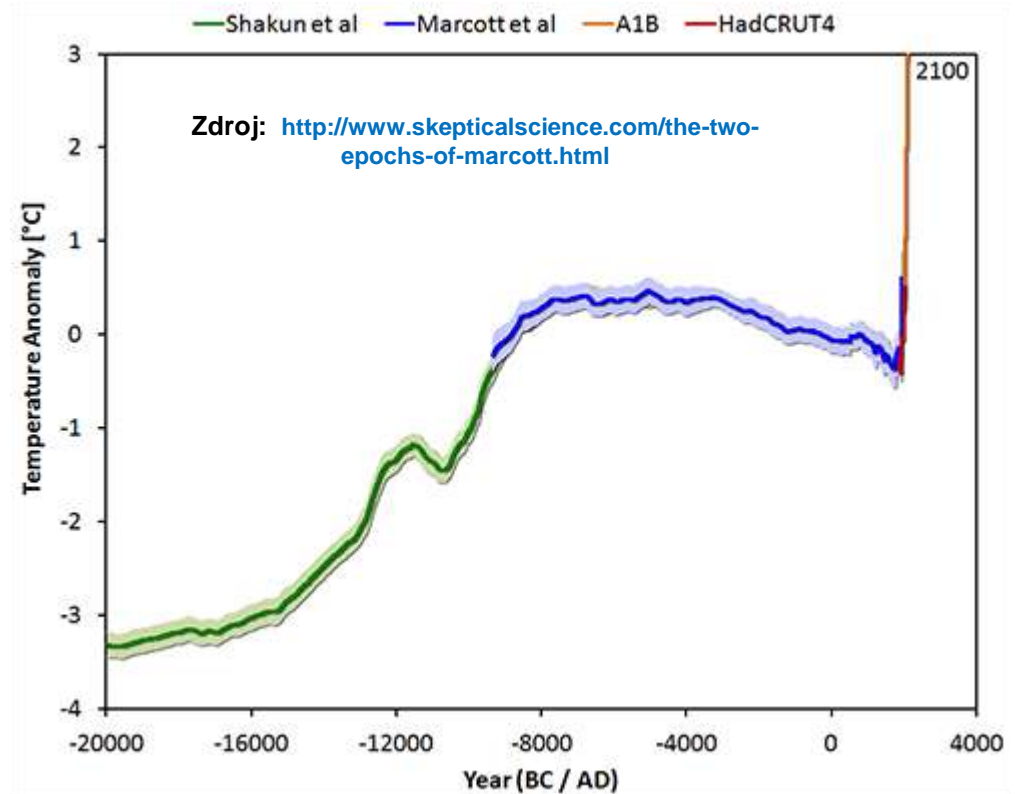
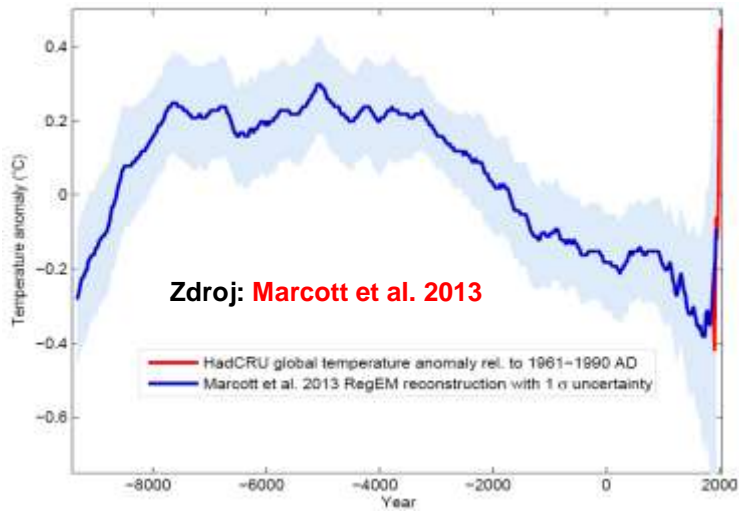


Zdroj: Alexander et al. 2006



Zdroj: Dai et al. 2004

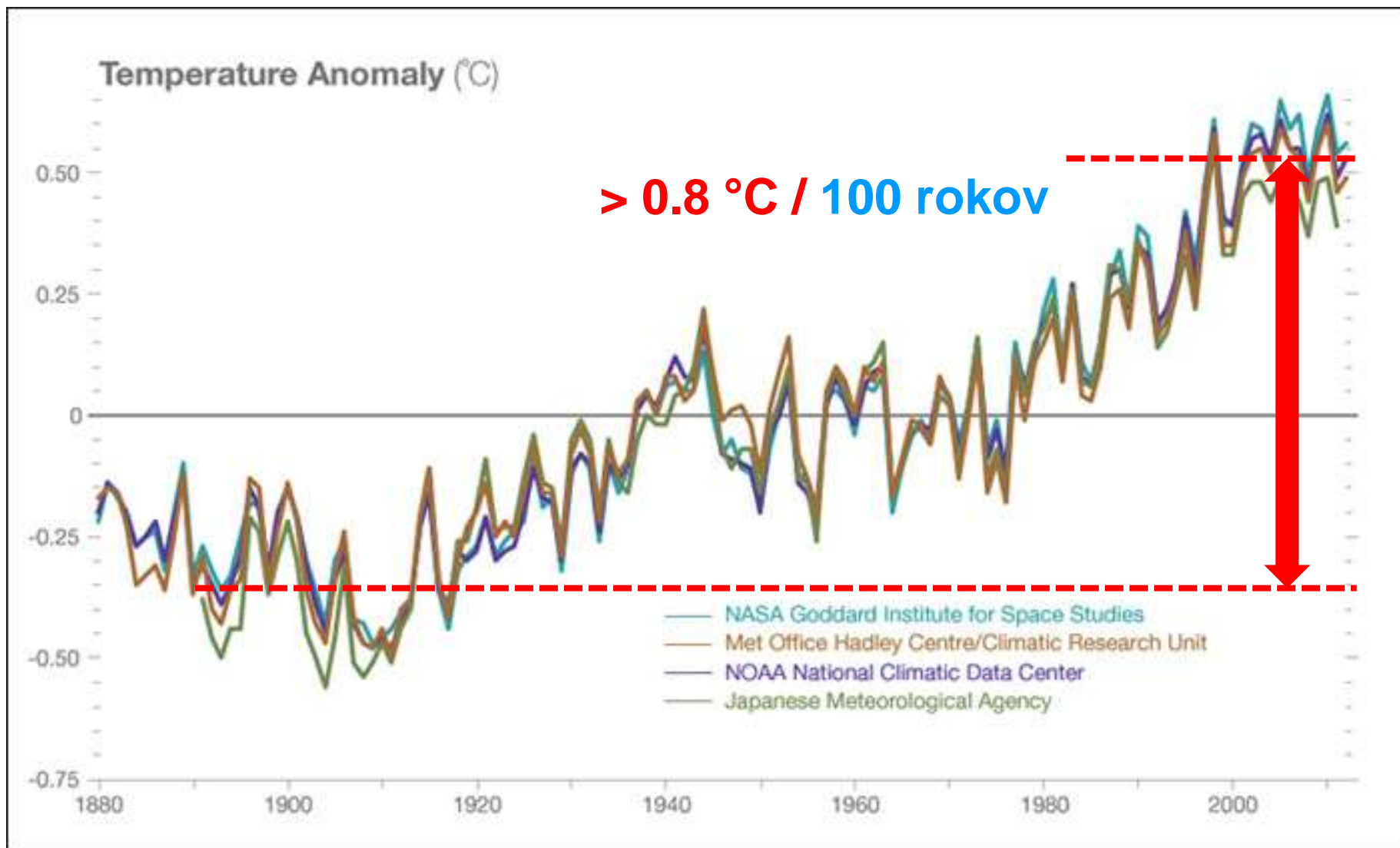
HISTORICKÁ PERSPEKTÍVA SÚČASNEJ ZMENY



HISTORICKÁ PERSPEKTÍVA SÚČASNEJ ZMENY

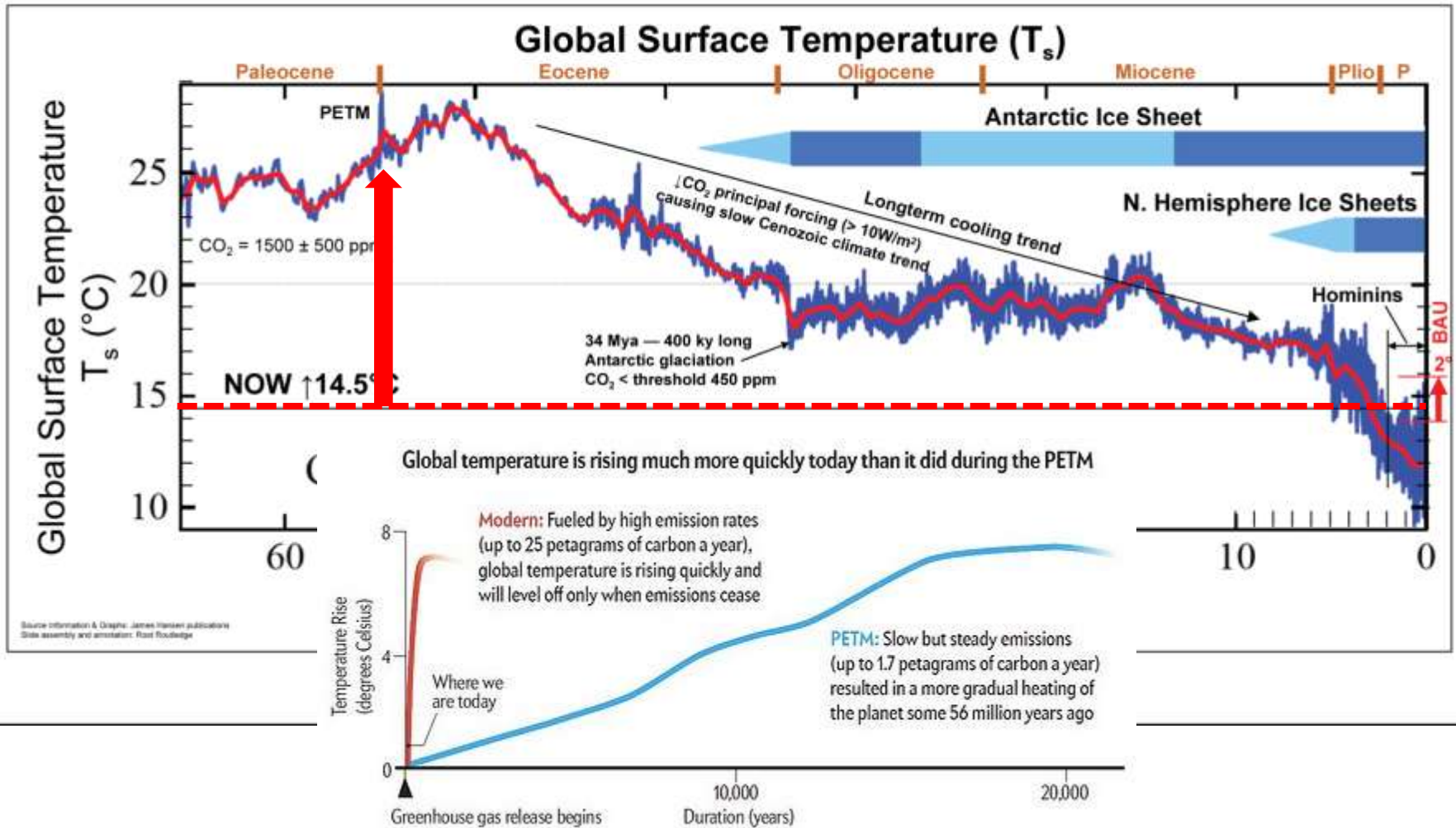


NEBEZPEČNÁ RÝCHLOSŤ SÚČASNEJ ZMENY



NEBEZPEČNÁ RÝCHLOSŤ SÚČASNEJ ZMENY

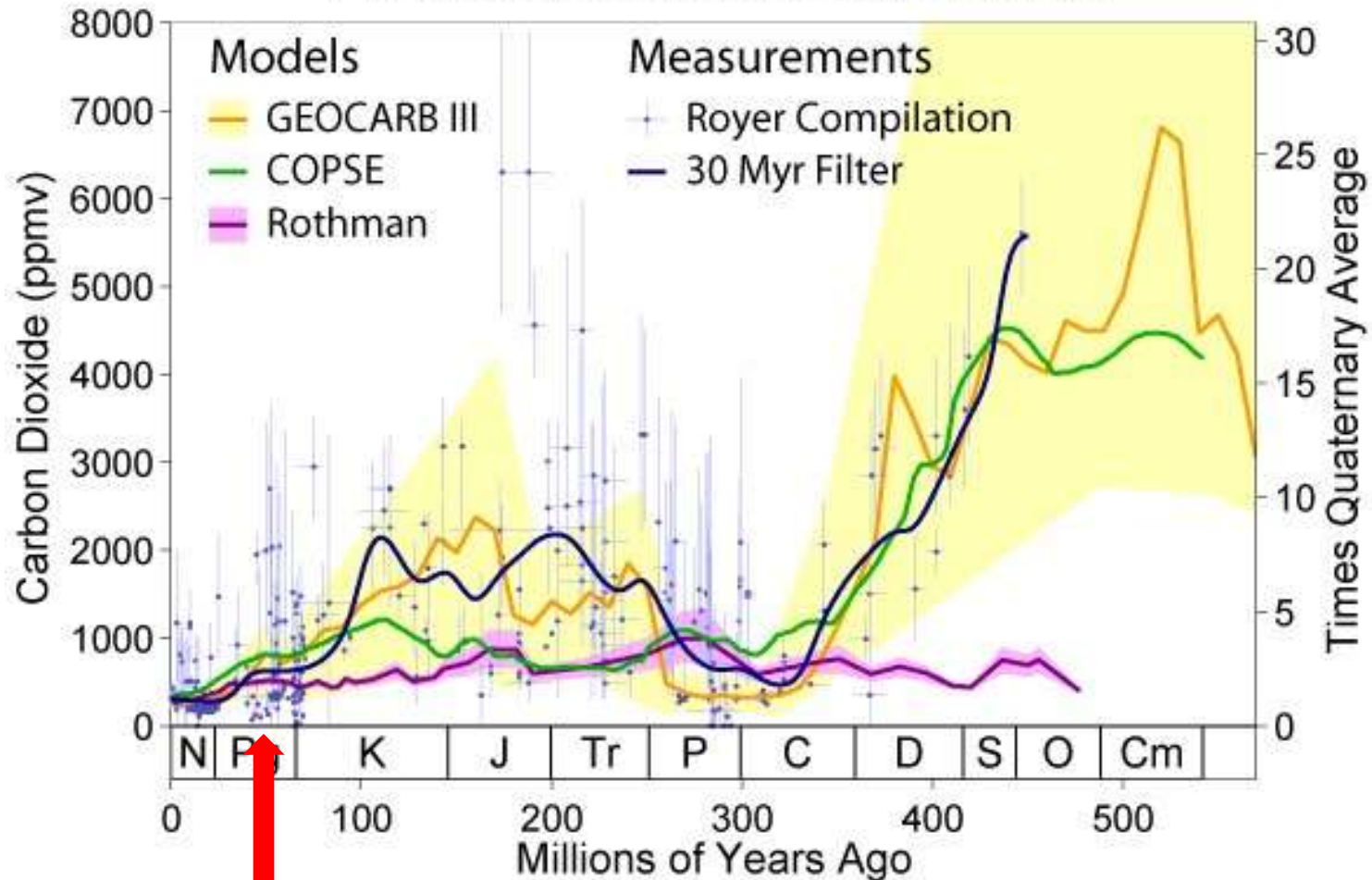
Zdroj: <http://www.alpineanalytics.com/Climate/DeepTime.html>



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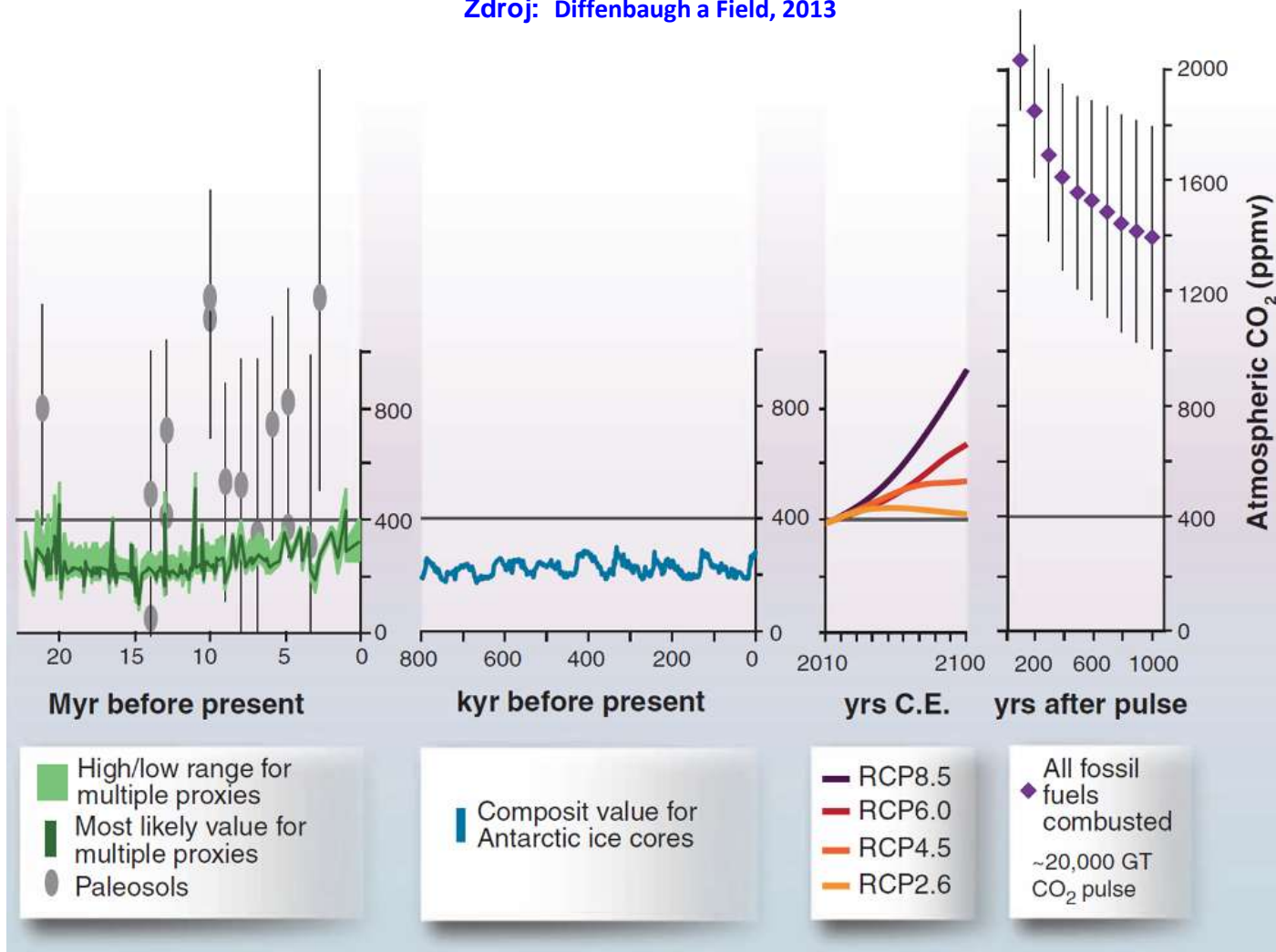
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Phanerozoic Carbon Dioxide

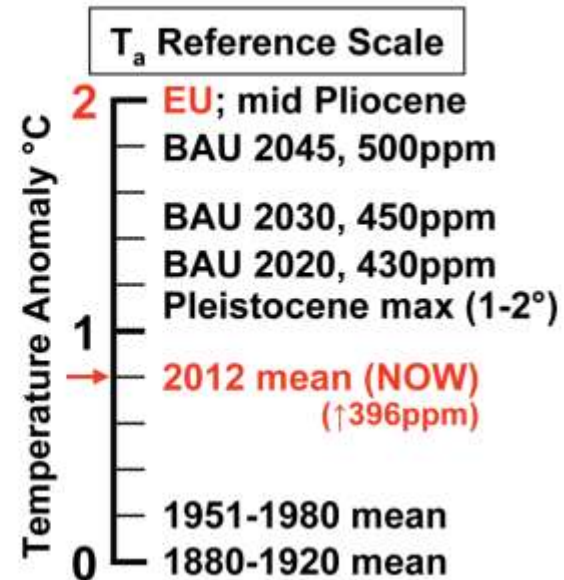
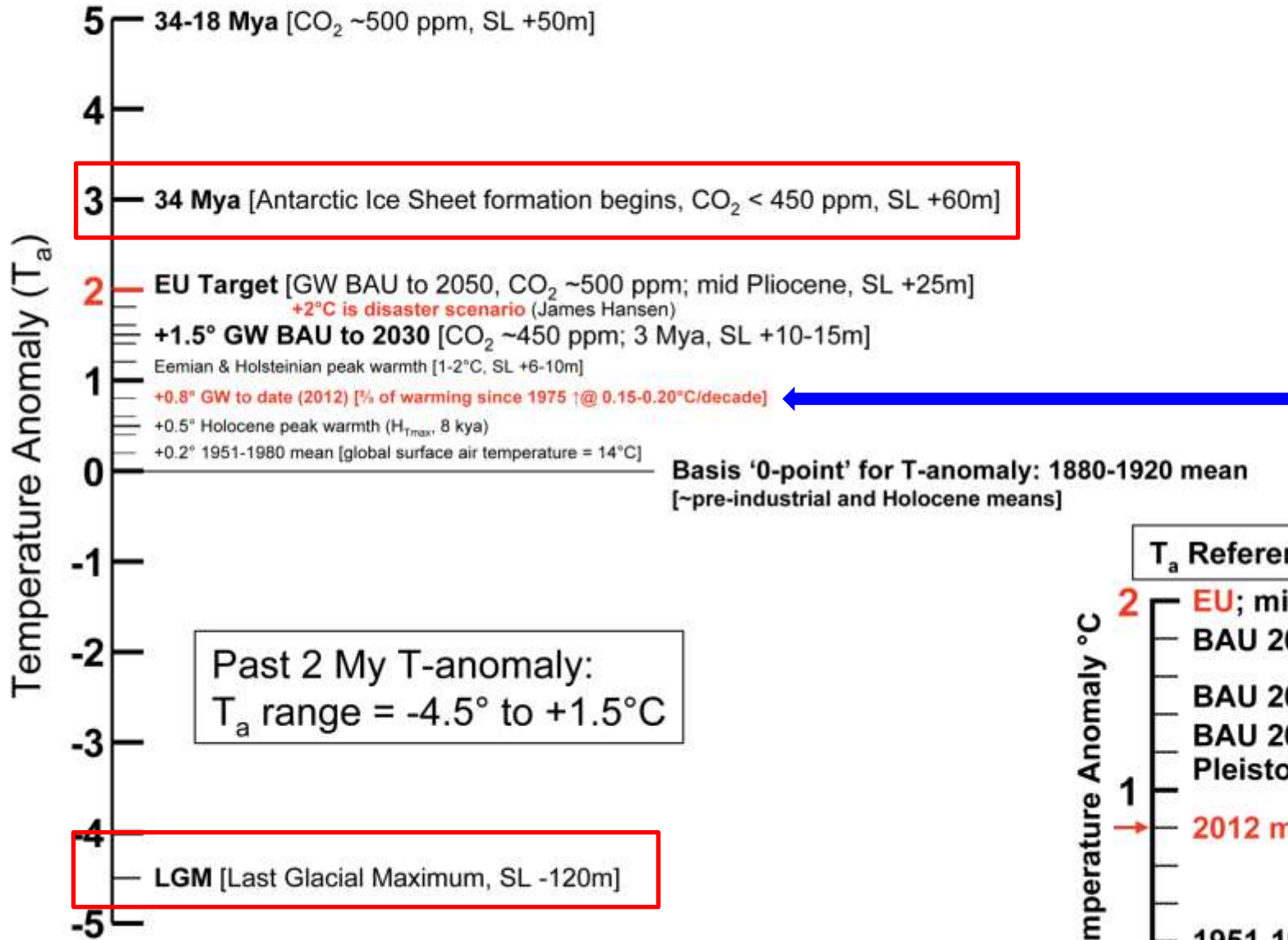


NEBEZPEČNÁ RÝCHLOSŤ SÚČASNEJ ZMENY

Zdroj: Diffenbaugh a Field, 2013

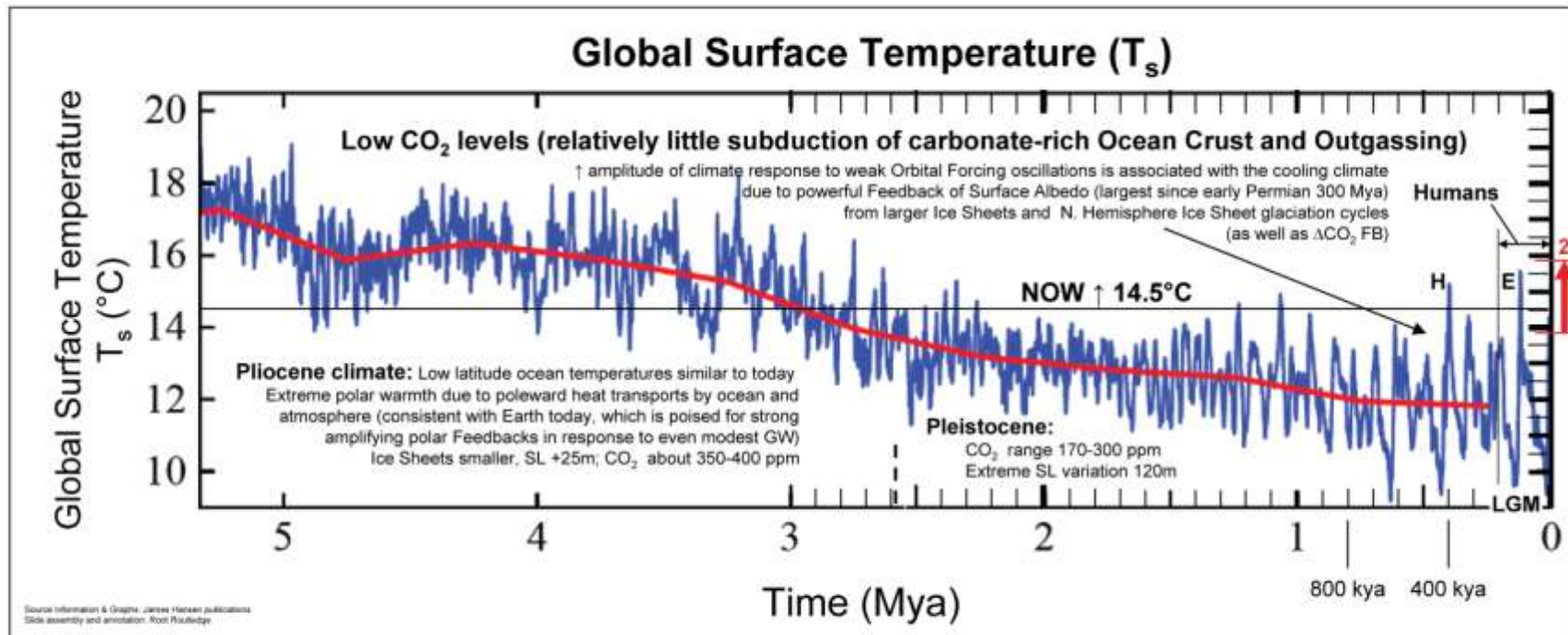


Temperature Anomaly 1880-1920 Benchmark and Reference Scale Offsets





KEDY PRÍDE ĎALŠIA DOBA L'ADOVÁ ?

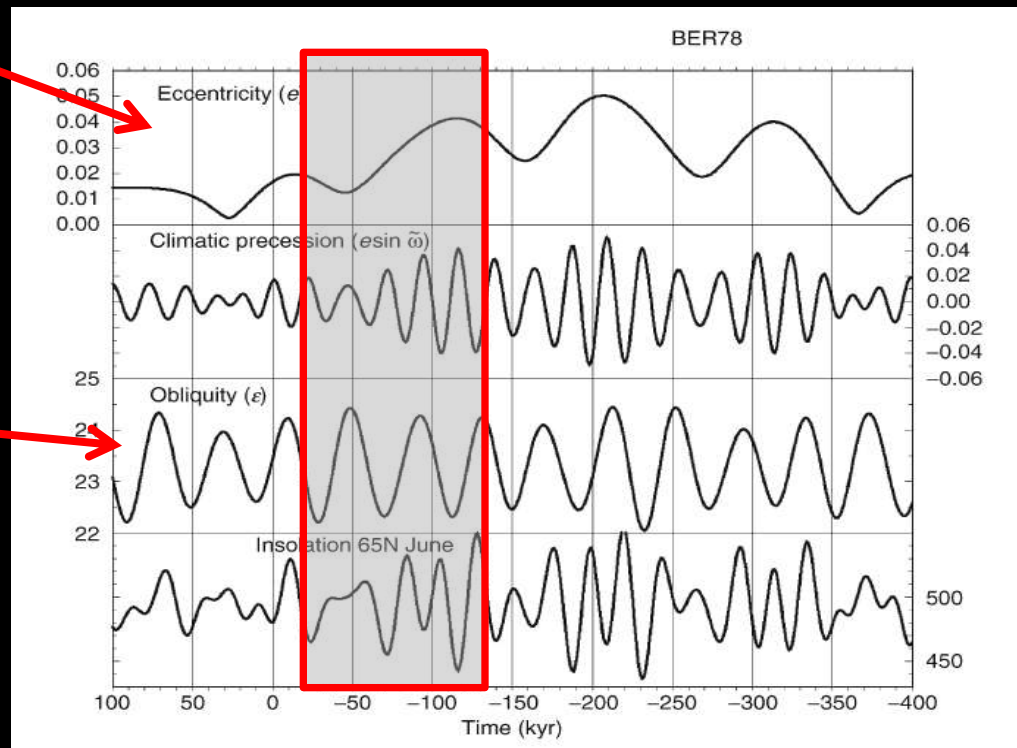
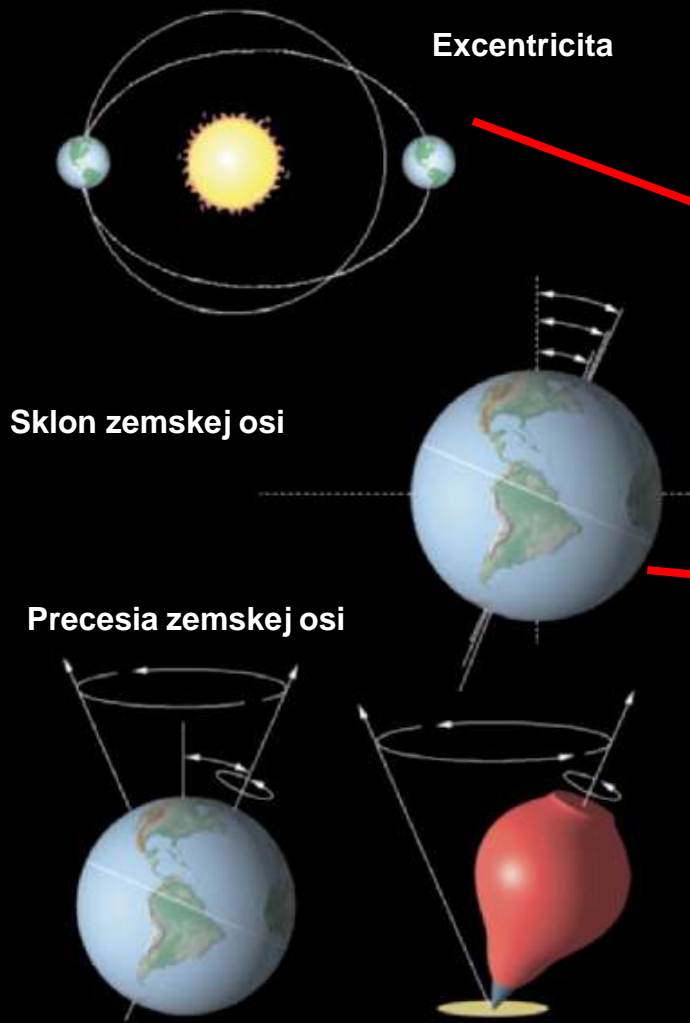


KEDY PRÍDE ĎALŠIA DOBA L'ADOVÁ

Zdroj: NASA



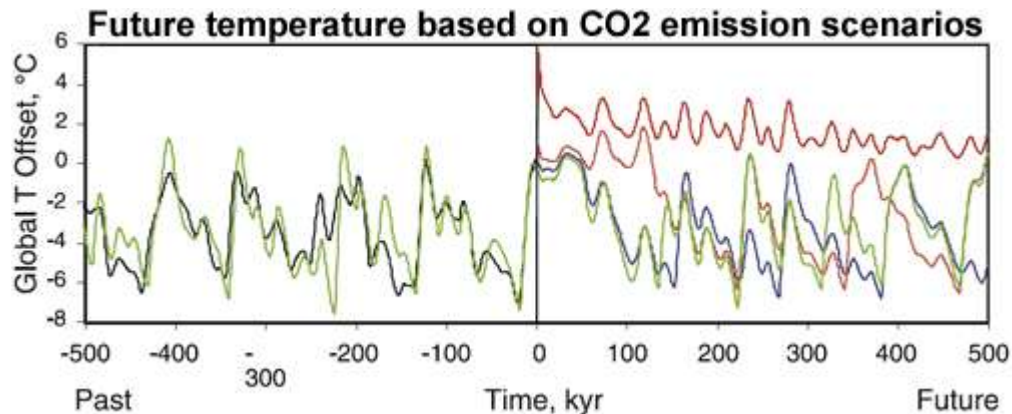
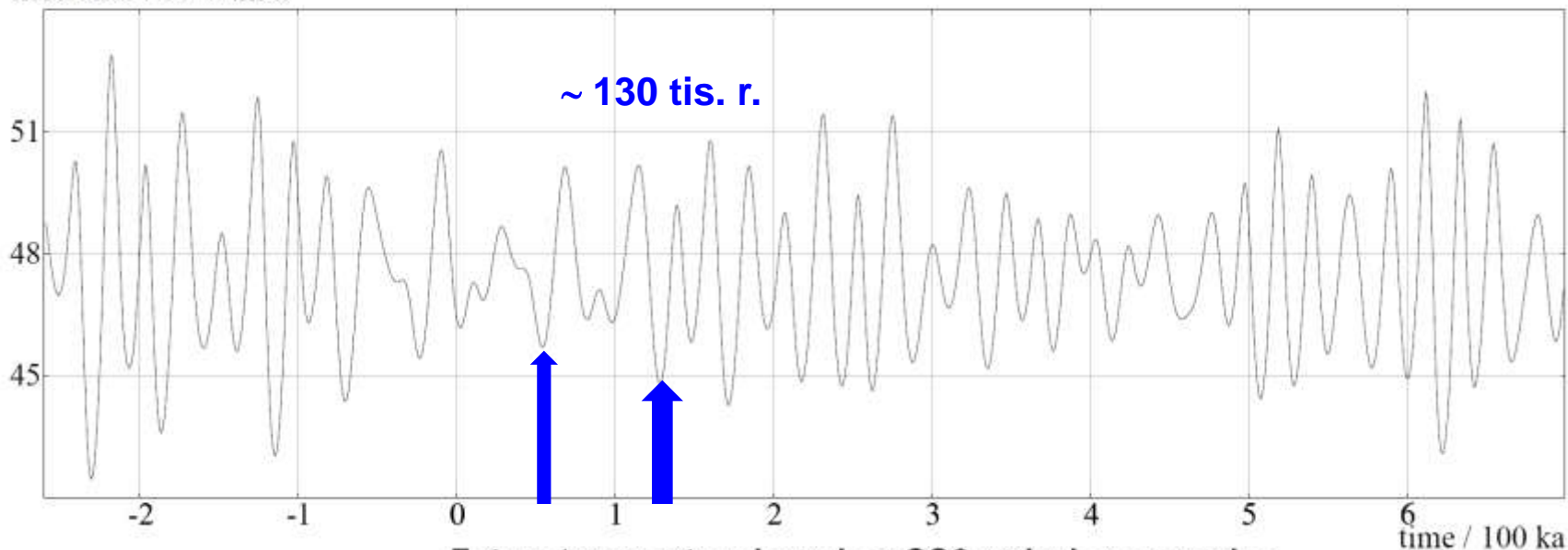
KEDY PRÍDE ĎALŠIA DOBA L'ADOVÁ ?



KEDY PRÍDE ĎALŠIA DOBA L'ADOVÁ ?

Mean insolation of 65N latitude during one month after the summer solstice

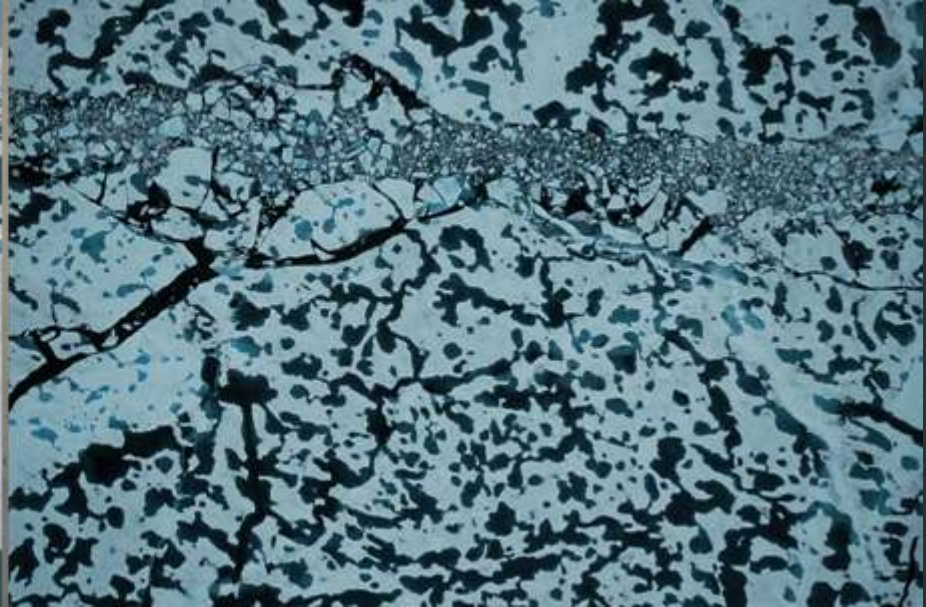
irradiance / 10 W.m-2



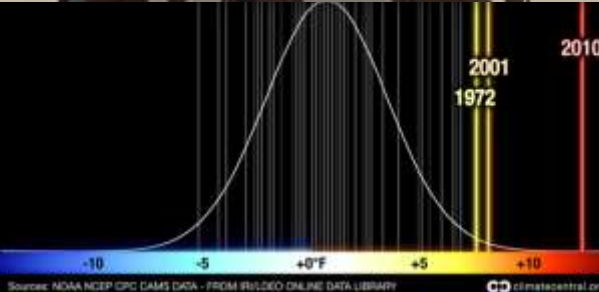
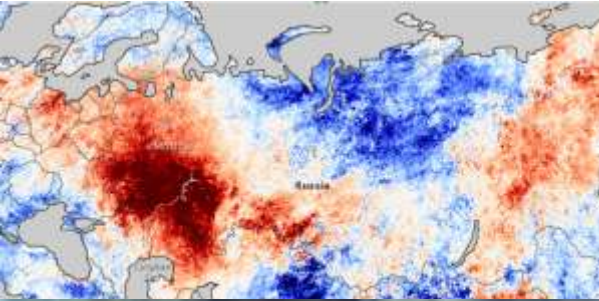
Zdroj: [Archer 2005](#)

EXTRÉMY POČASIA A KLIMATICKÁ ZMENA

NPEO2013 camera#2 Sun Jun 30 14:09:06

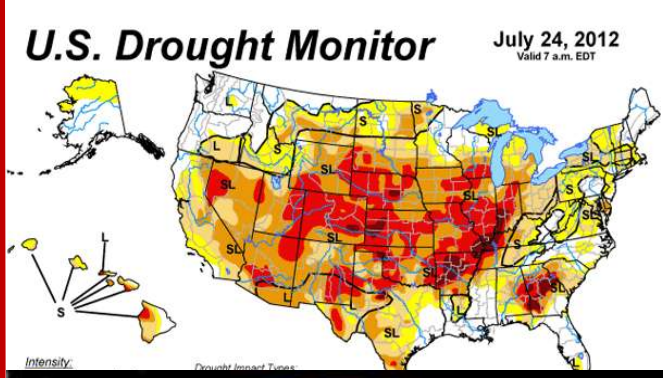
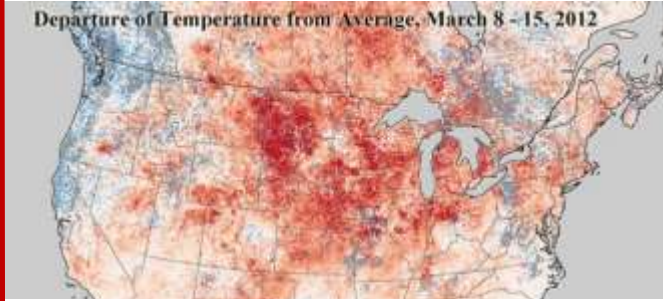


RUSKO - LETO 2010

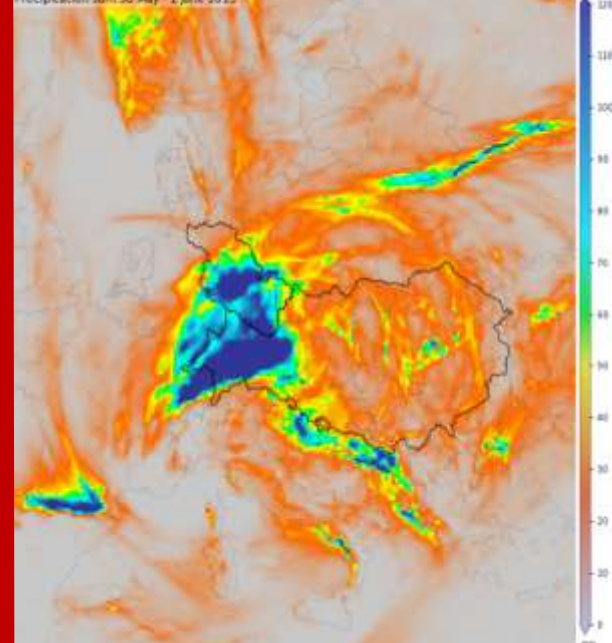
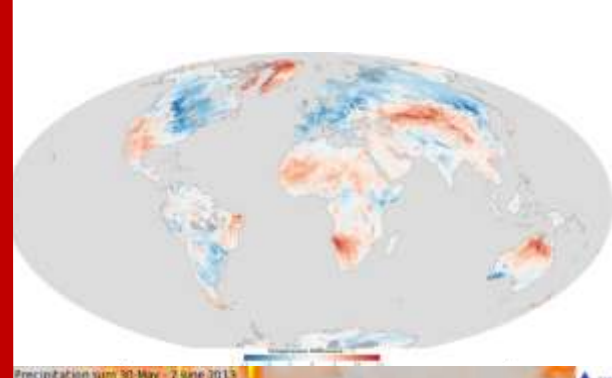


Source: NOAA NCEP CPC GAMS DATA - FROM IBU-DEO ONLINE DATA LIBRARY cd.climatecentral.org

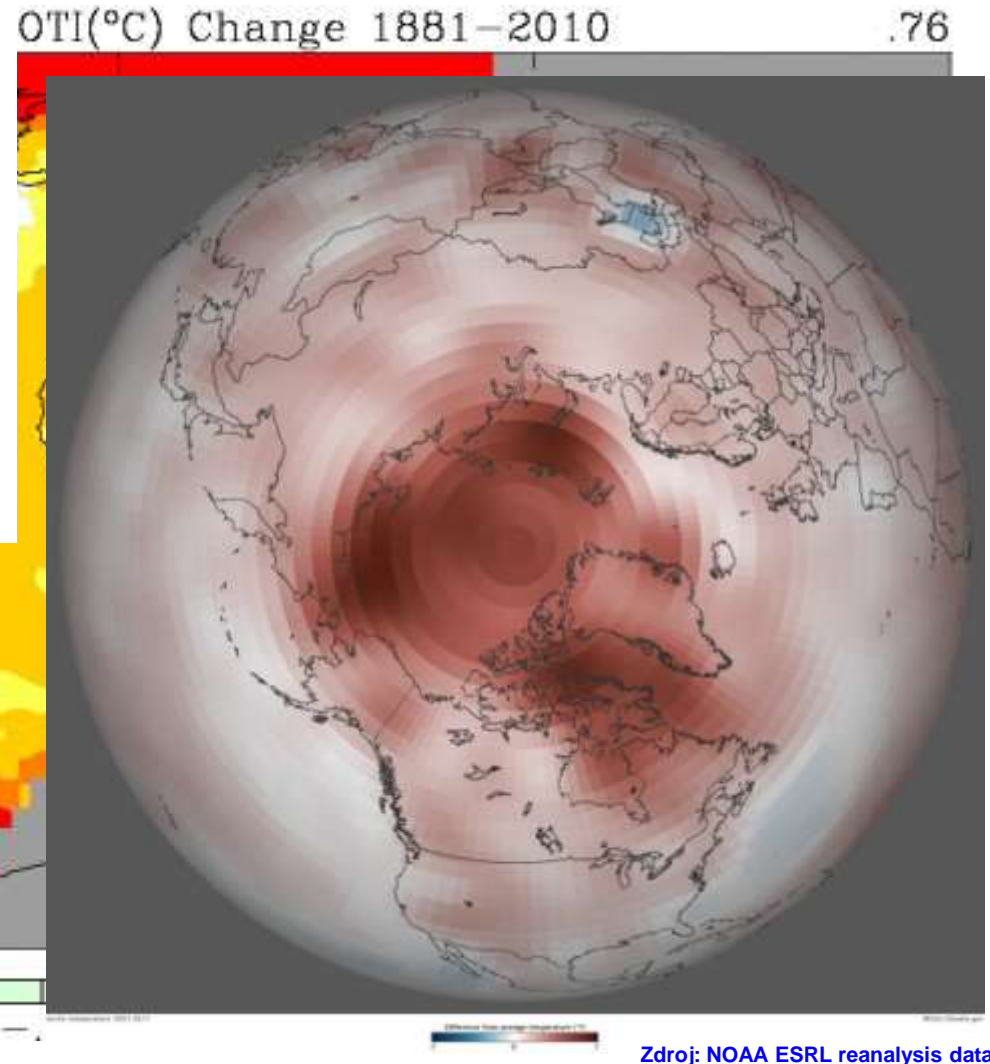
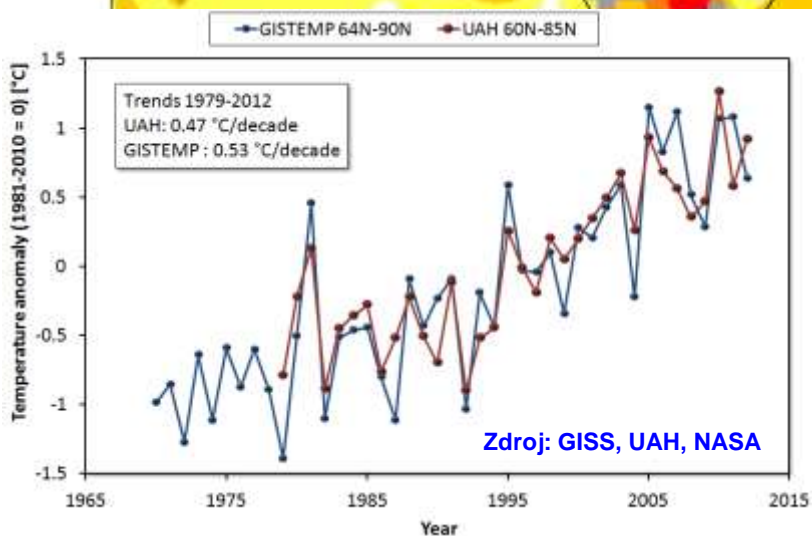
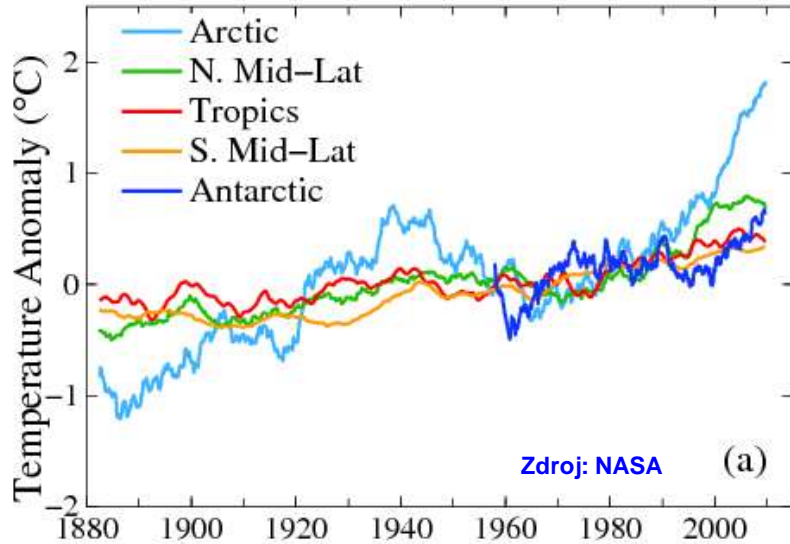
USA - MAREC 2012



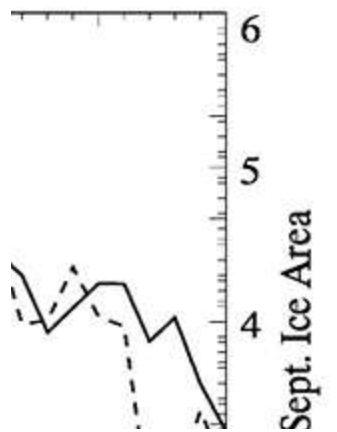
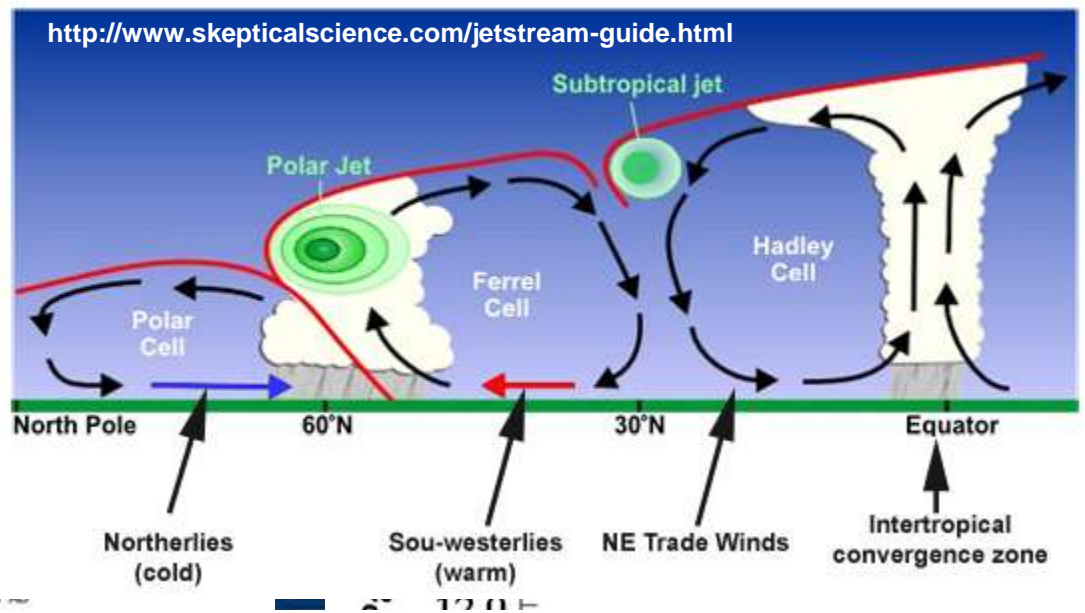
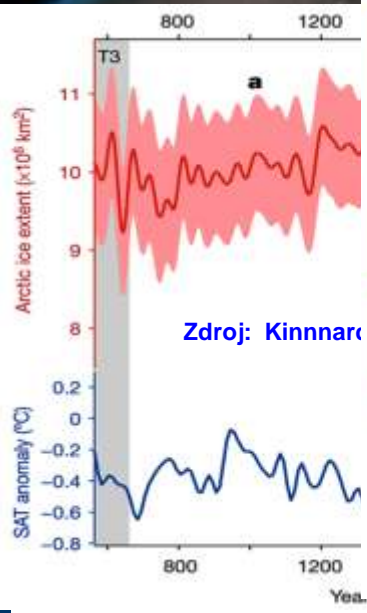
EURÓPA - 2009-13



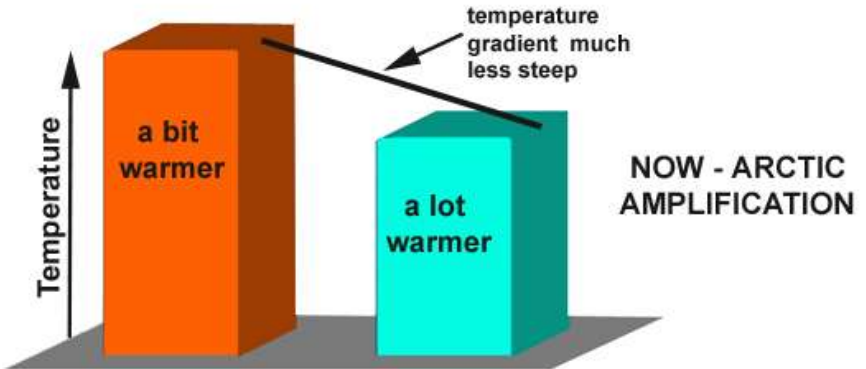
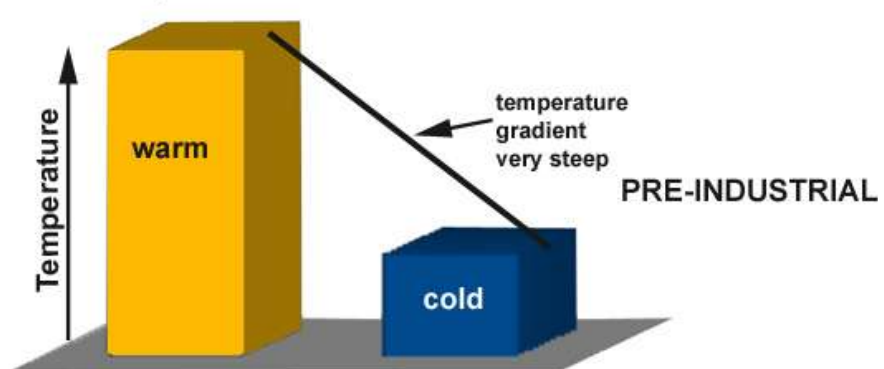
EXTRÉMY POČASIA A KLIMATICKÁ ZMENA



EXTRÉMY POČASIA A KLIMATICKÁ ZMENA

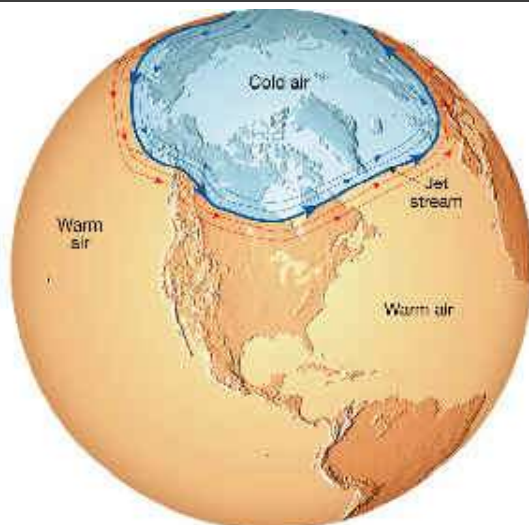


EQUATOR NORTH POLE

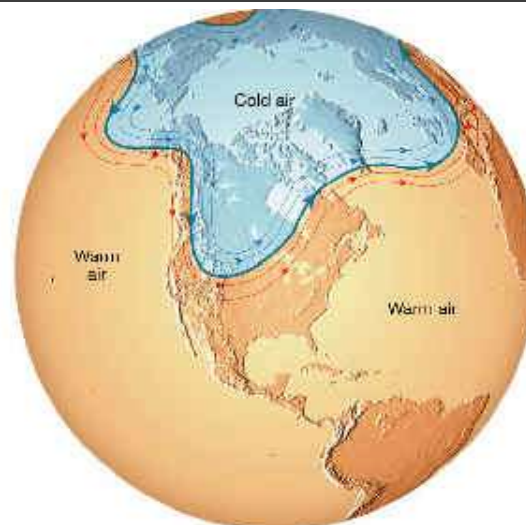


<http://www.skepticalscience.com/jetstream-guide.html>

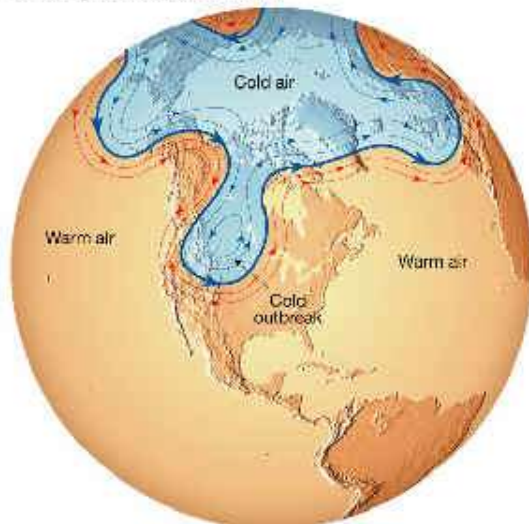
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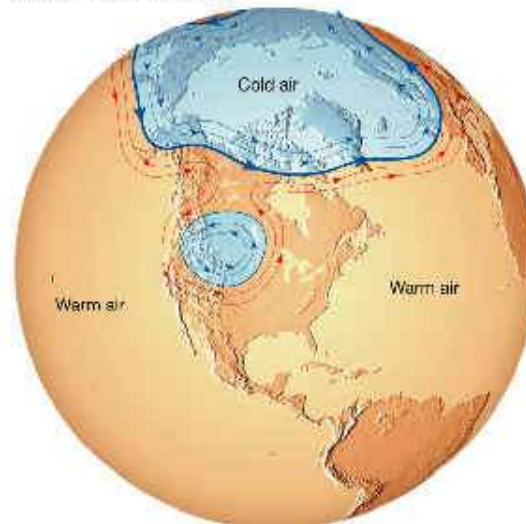
(a) Gently undulating upper airflow



(b) Meanders form in jet stream



(c) Strong waves form in upper airflow

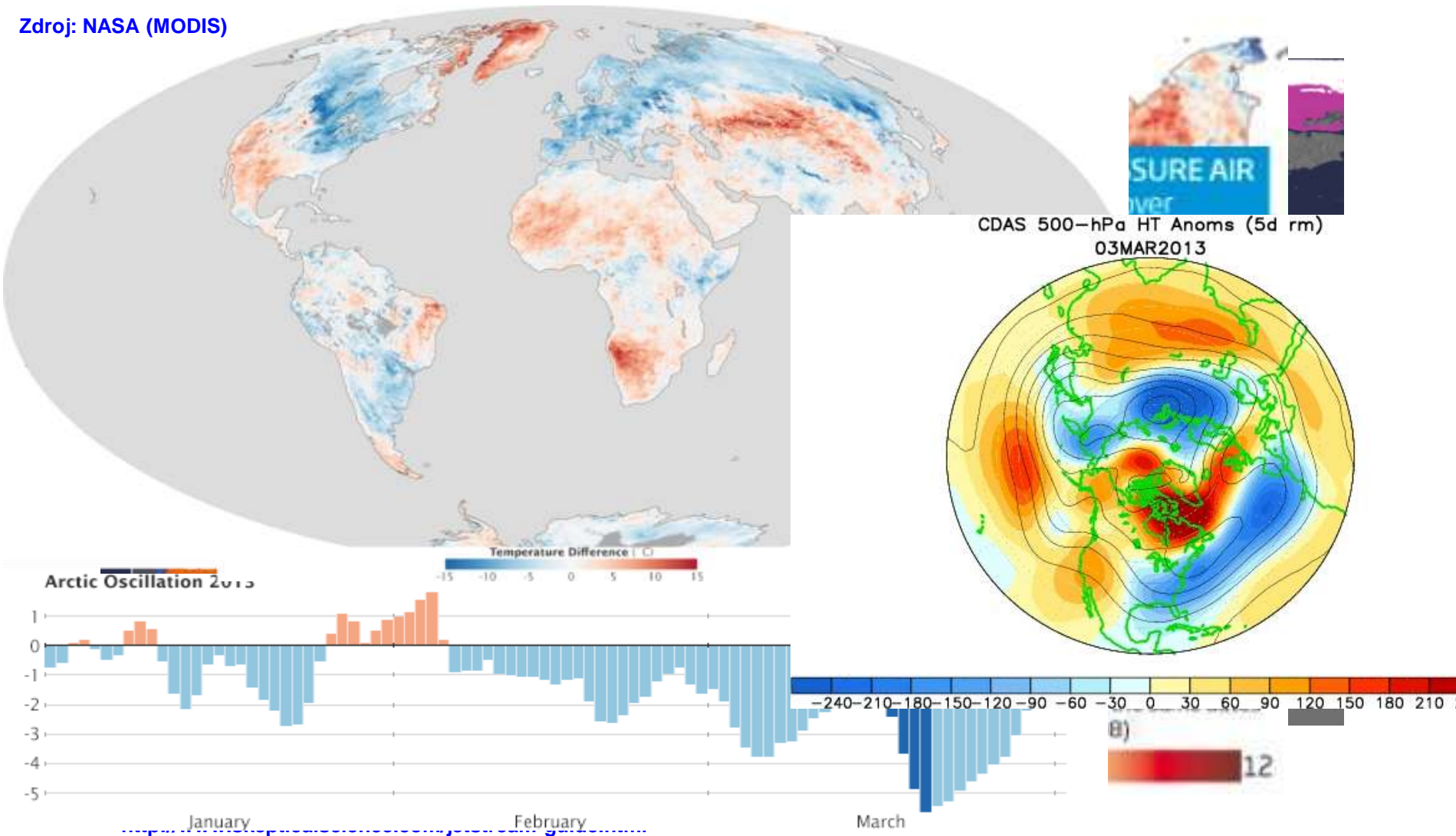


(d) Return to a period of flatter flow aloft

zdroj: *Francis and Vavrus 2012*

EXTRÉMY POČASIA A KLIMATICKÁ ZMENA

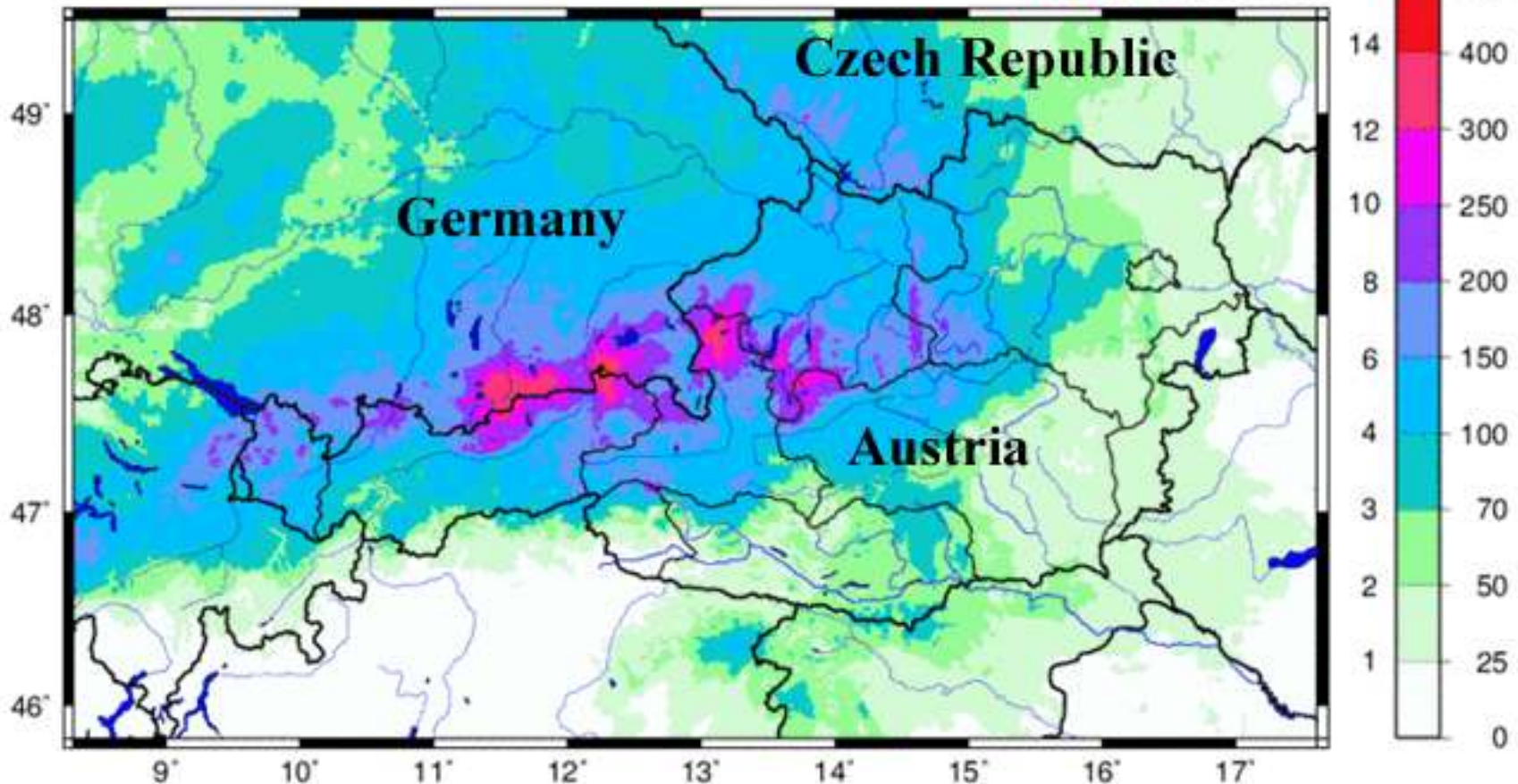
Zdroj: NASA (MODIS)



EXTRÉMY POČASIA A KLIMATICKÁ ZMENA

Rainfall May 29 - June 6, 2013

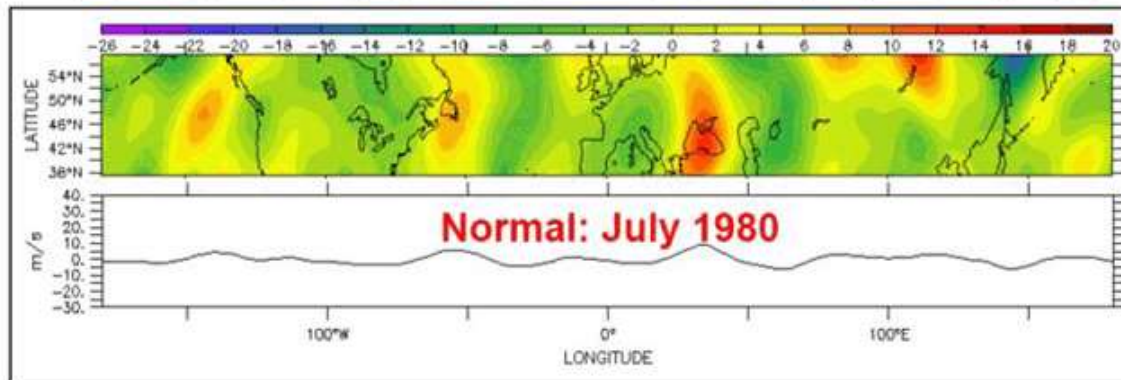
29.05.2013 06:00 UTC - 04.06.2013 06:00 UTC



Zdroj: NASA (MODIS)

EXTRÉMY POČASIA A KLIMATICKÁ ZMENA

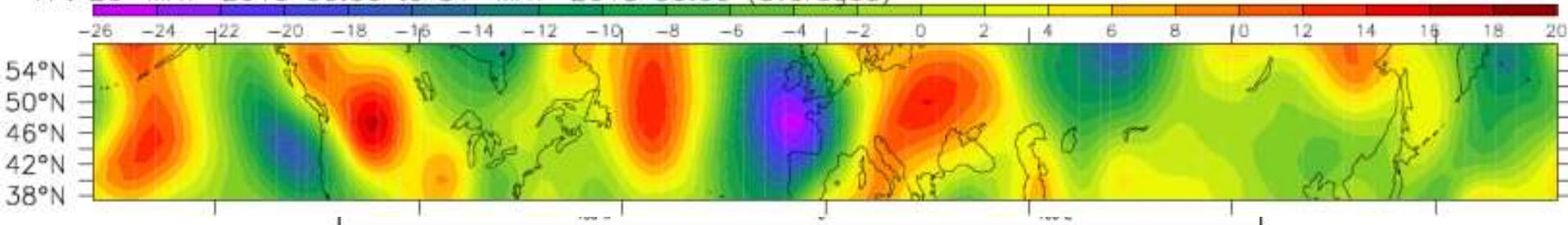
North-South Winds at 300 mb in Extreme and Normal Periods



HEIGHT (mb) : 300

Data from NOAA NCEP-NCAR CDAS-1 Reanalysis

A : 20-MAY-2013 00:00 to 31-MAY-2013 00:00 (averaged)



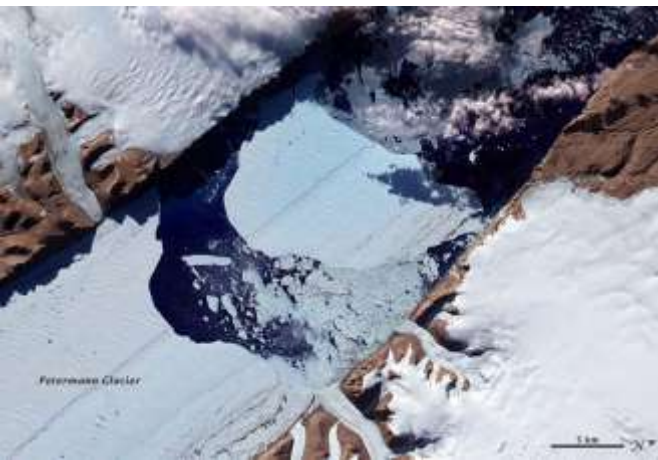
Extreme: May 20 - 31, 2013

Zdroj: Petoukhov and Stefan Kaminson



ĎAKUJEM ZA POZORNOSŤ

Jozef Pecho
Ústav fyziky atmosféry AV ČR, Praha
pecho@ufa.cas.cz



18.9.2013 Bratislava

