

GOME observations of OClO in the Arctic stratosphere

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Retrieval : DOAS

Example

Future

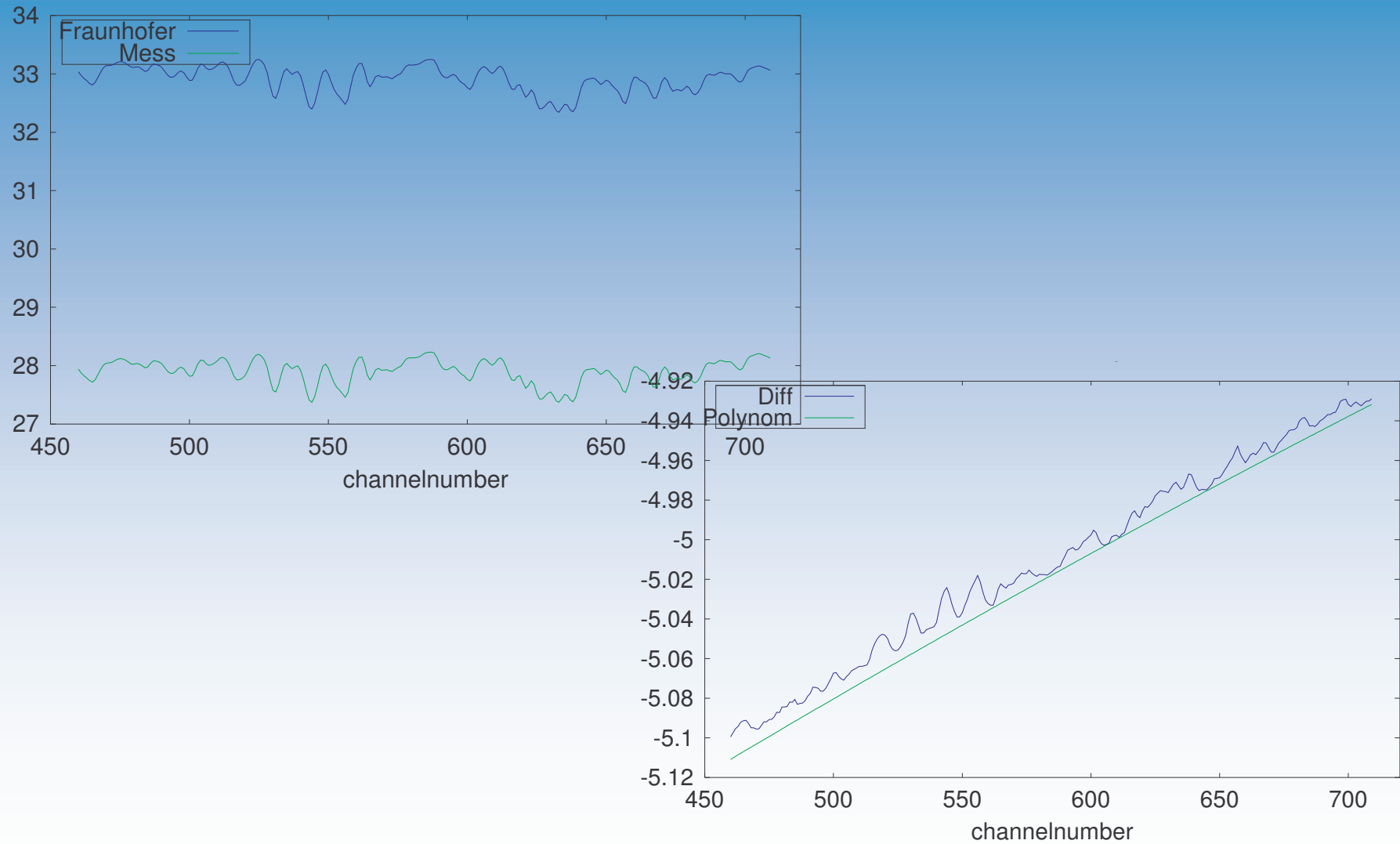
Results : Overview

Case Studies

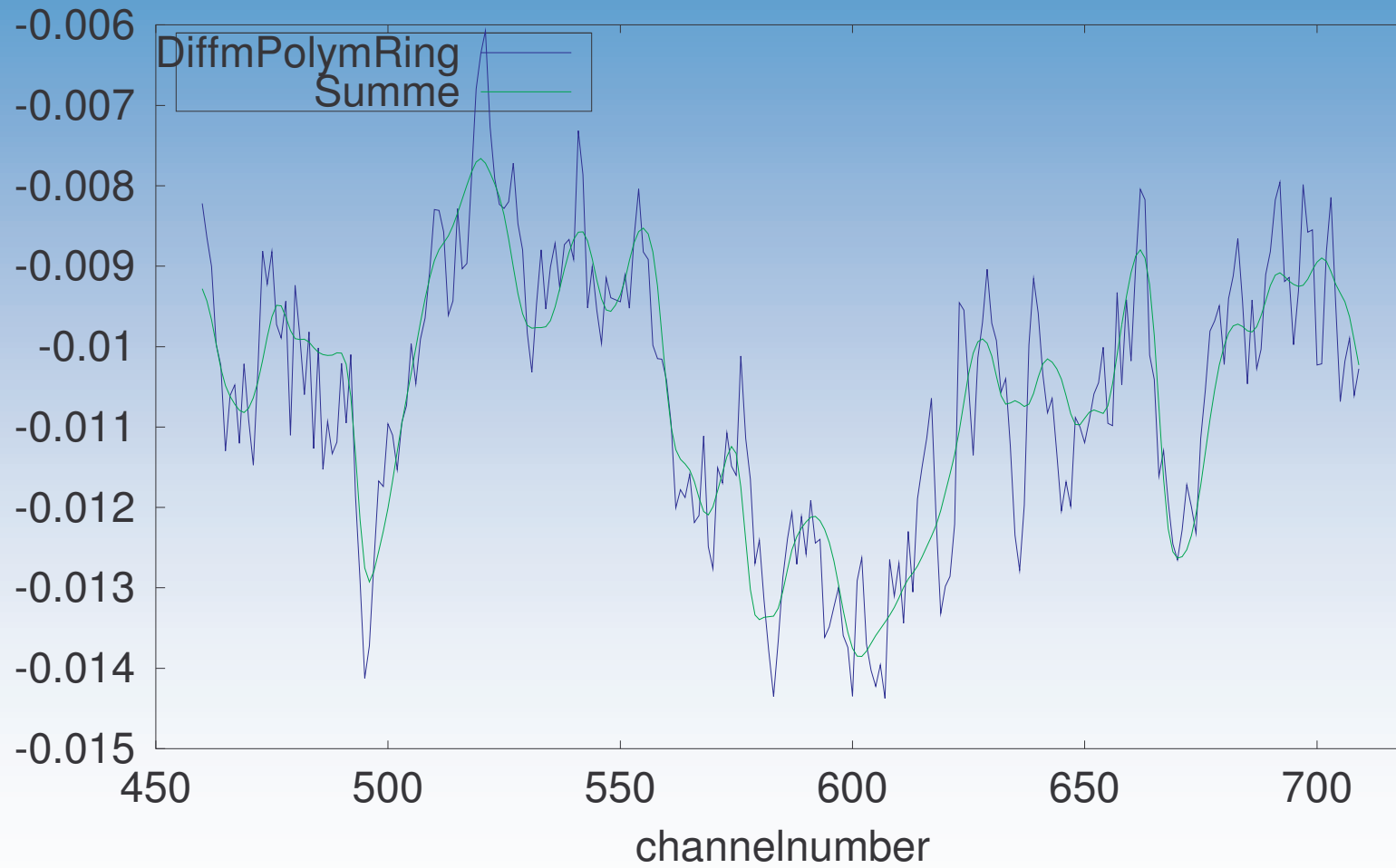
Summary/Outlook

OC10 Fit

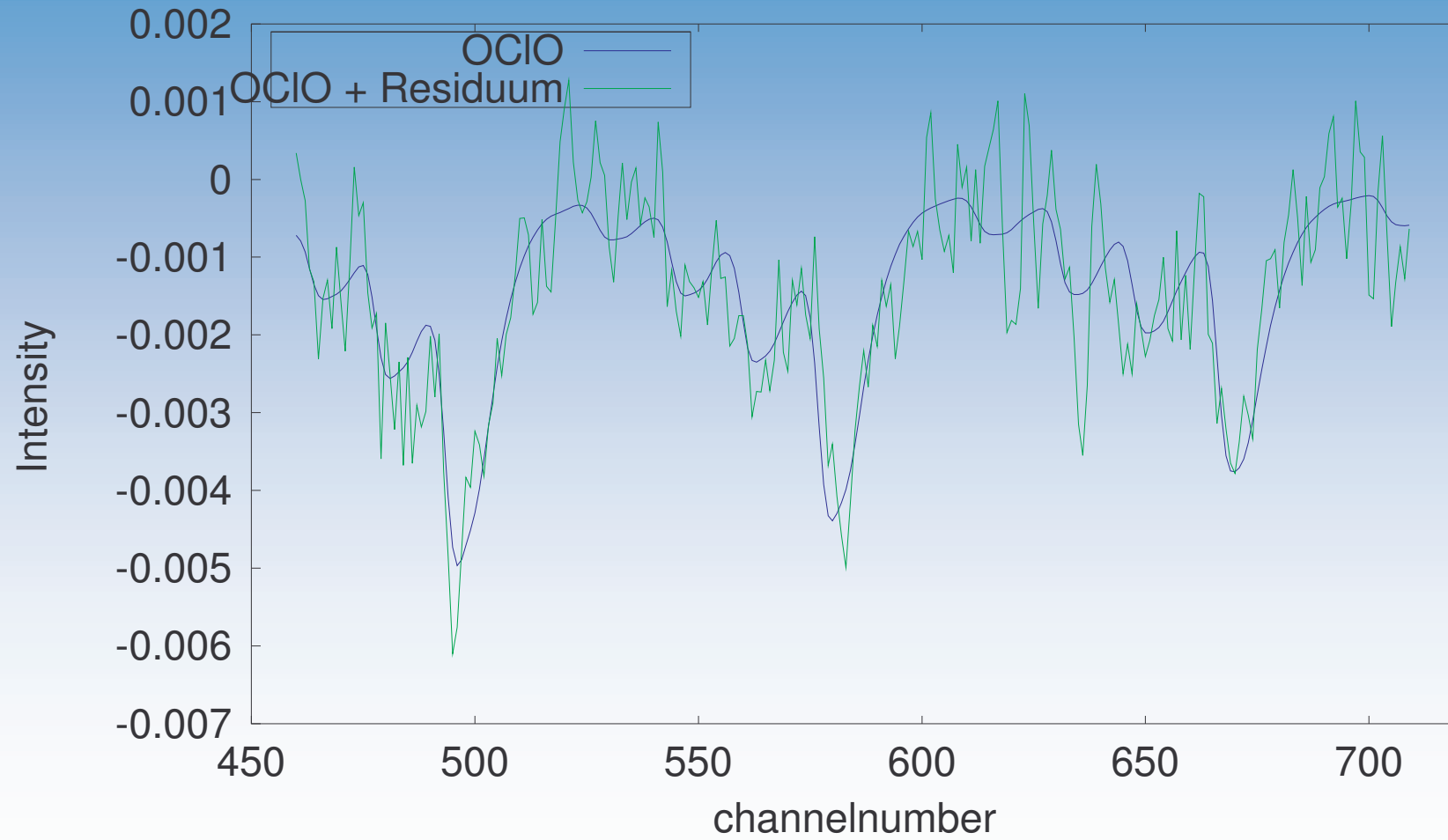
Messspektrum und Fraunhofer-Referenz



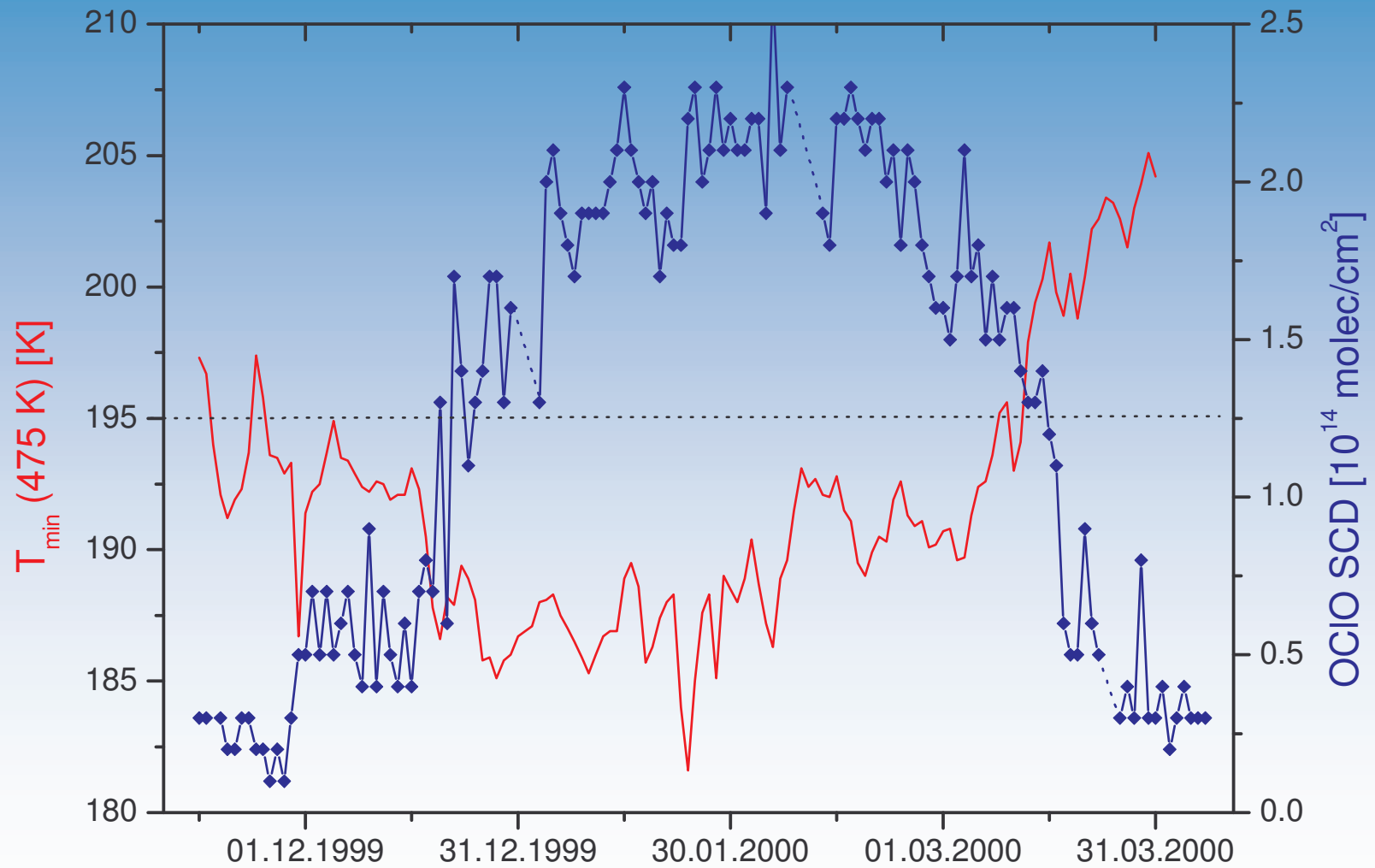
OC10 Fit



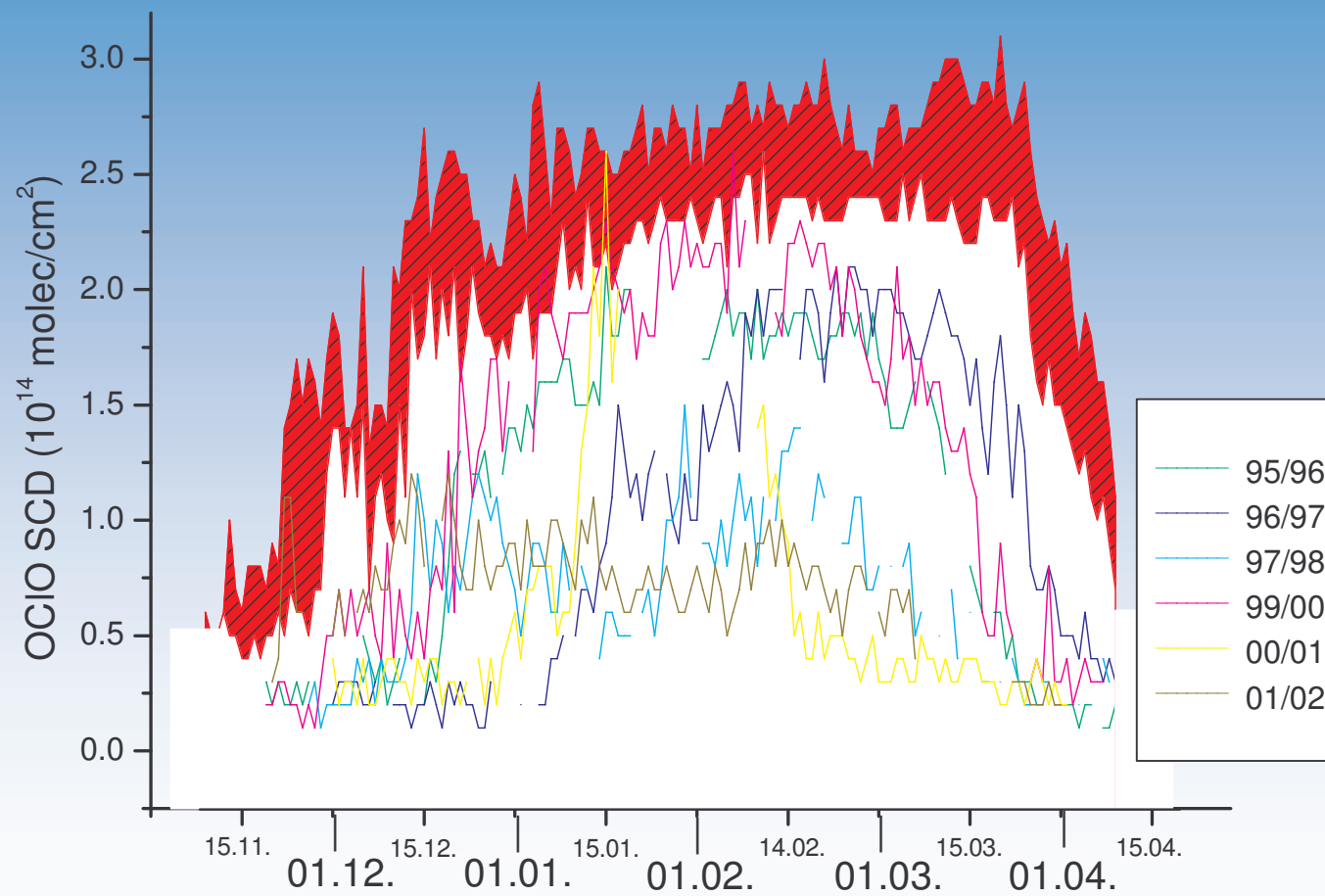
OCIO-Fit



1999/2000



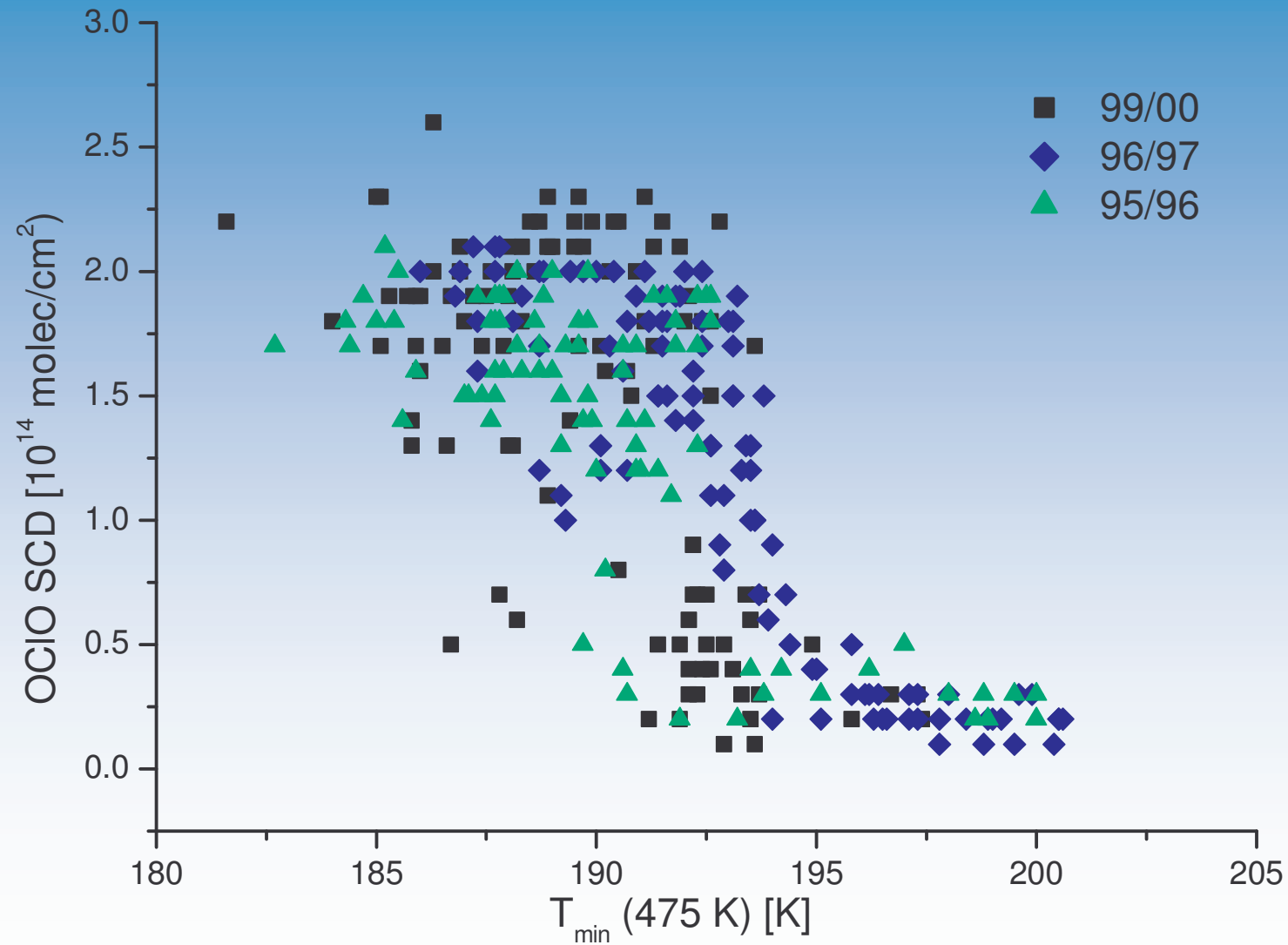
Overview



Case Studies

OC10 in the Activation Phase

OCIO in the Activation Phase

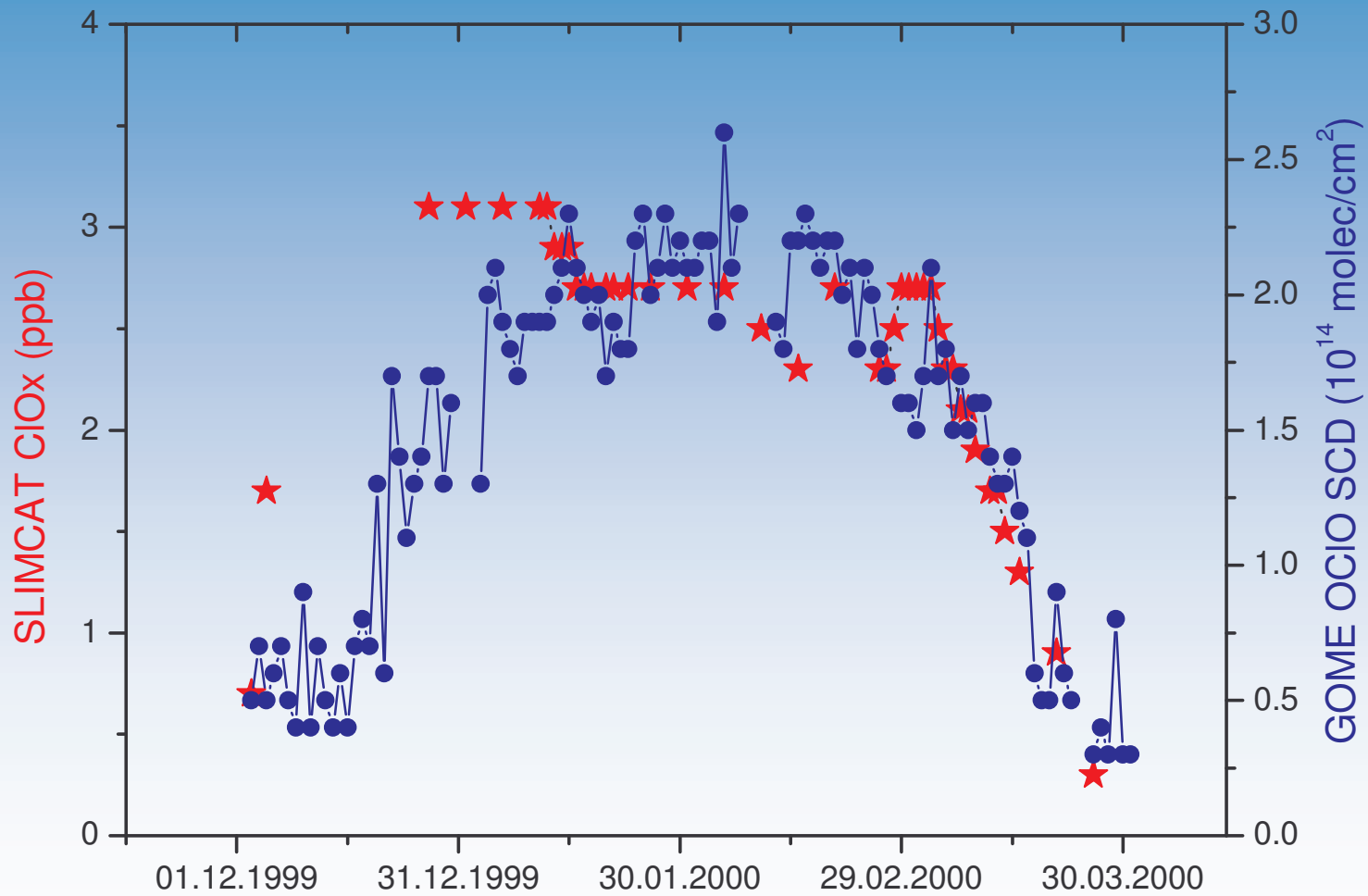


Case Studies

OC10 in the Activation Phase

Comparison to Slimcat

Comparison to SLIMCAT



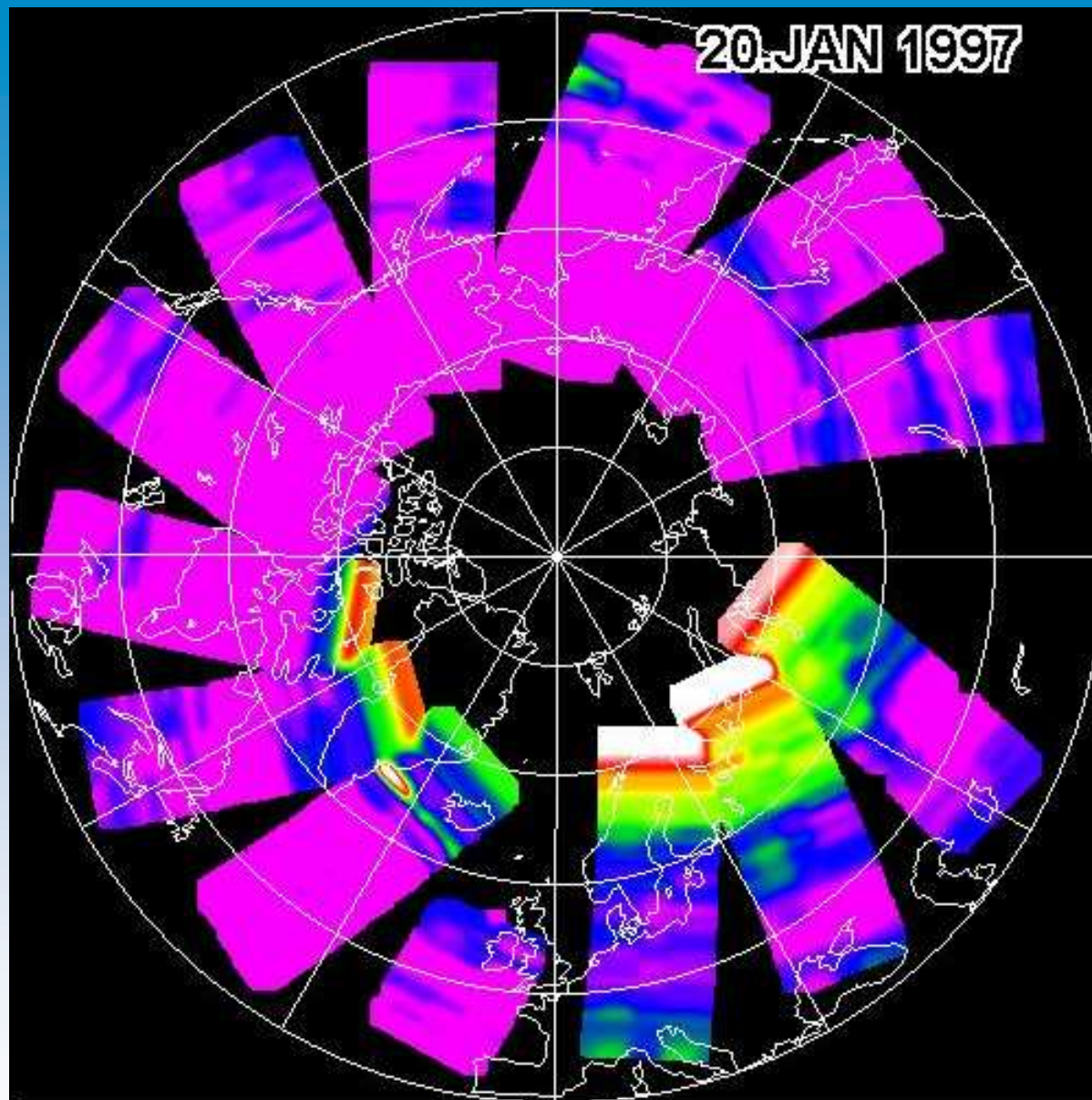
Case Studies

OC10 in the Activation Phase

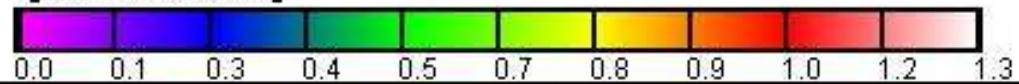
Comparison to Slimcat

Activation by stratospheric
mountain waves

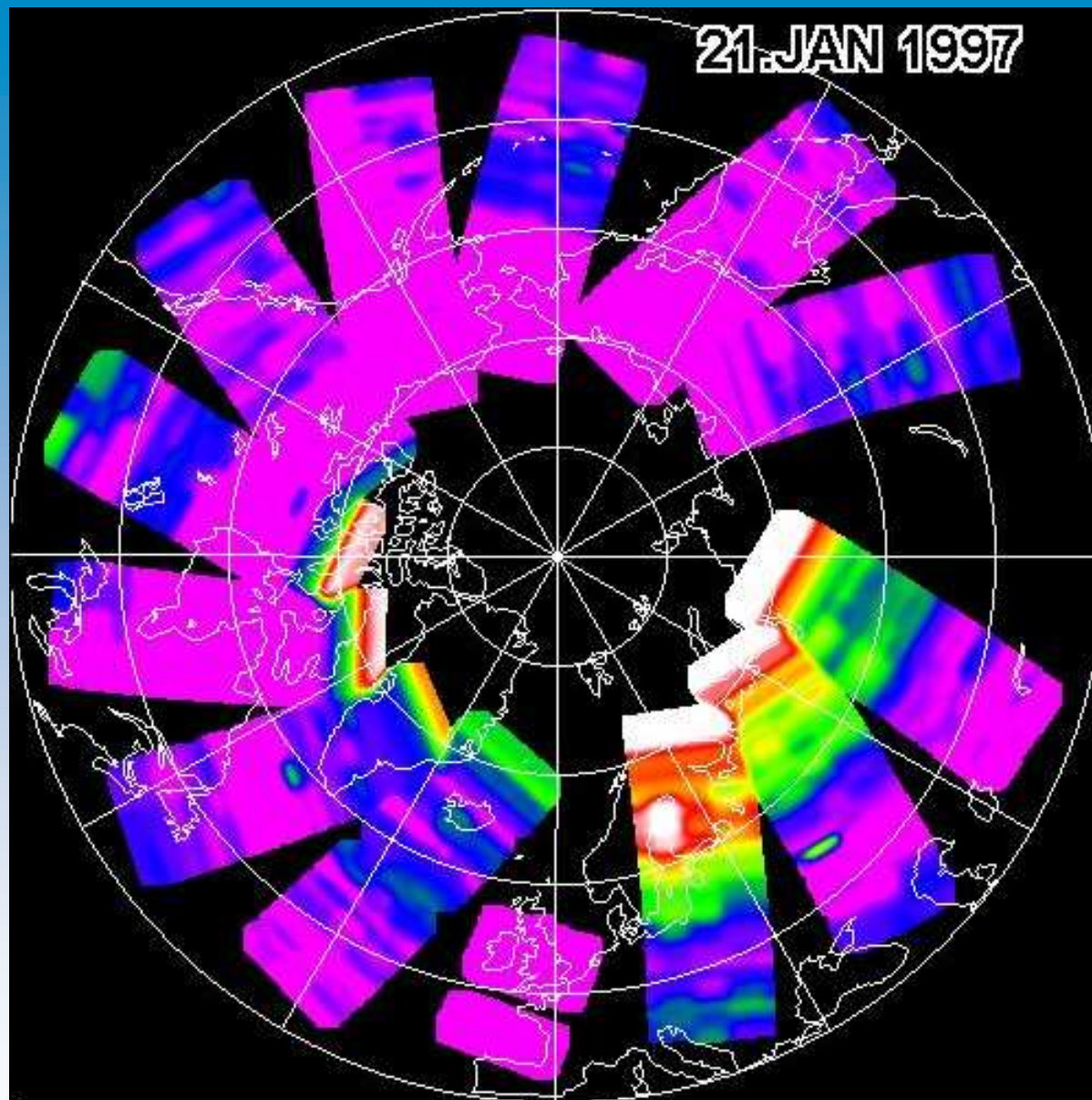
20.JAN 1997



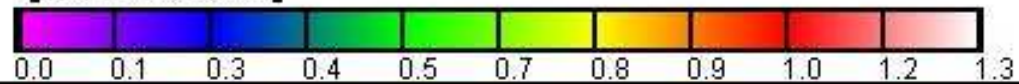
[10^{14} molec/cm²]



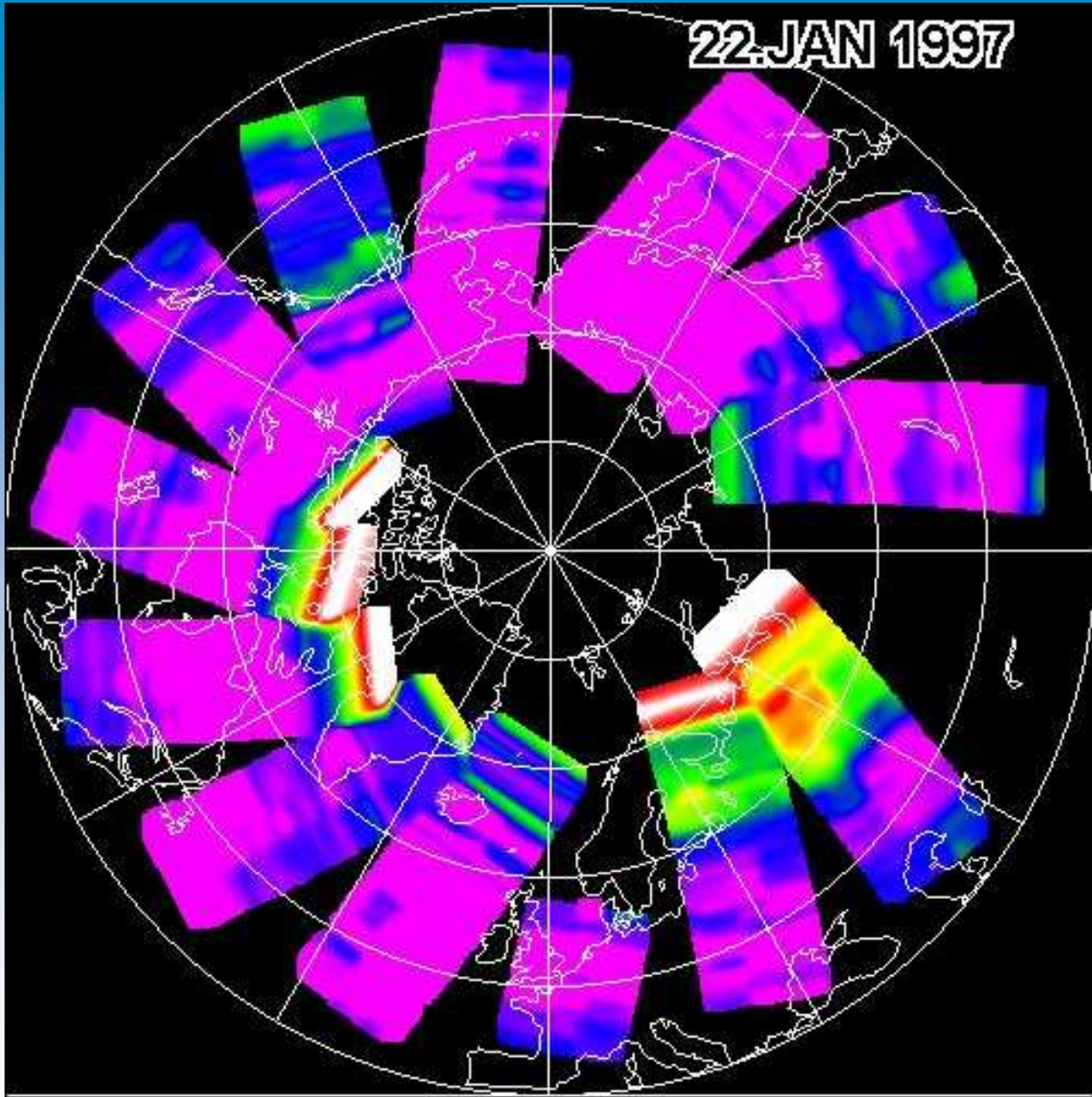
21.JAN 1997



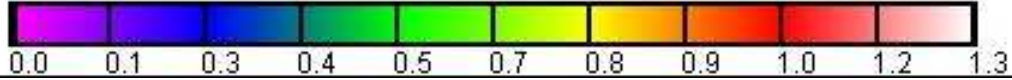
$[10^{14} \text{ molec/cm}^2]$

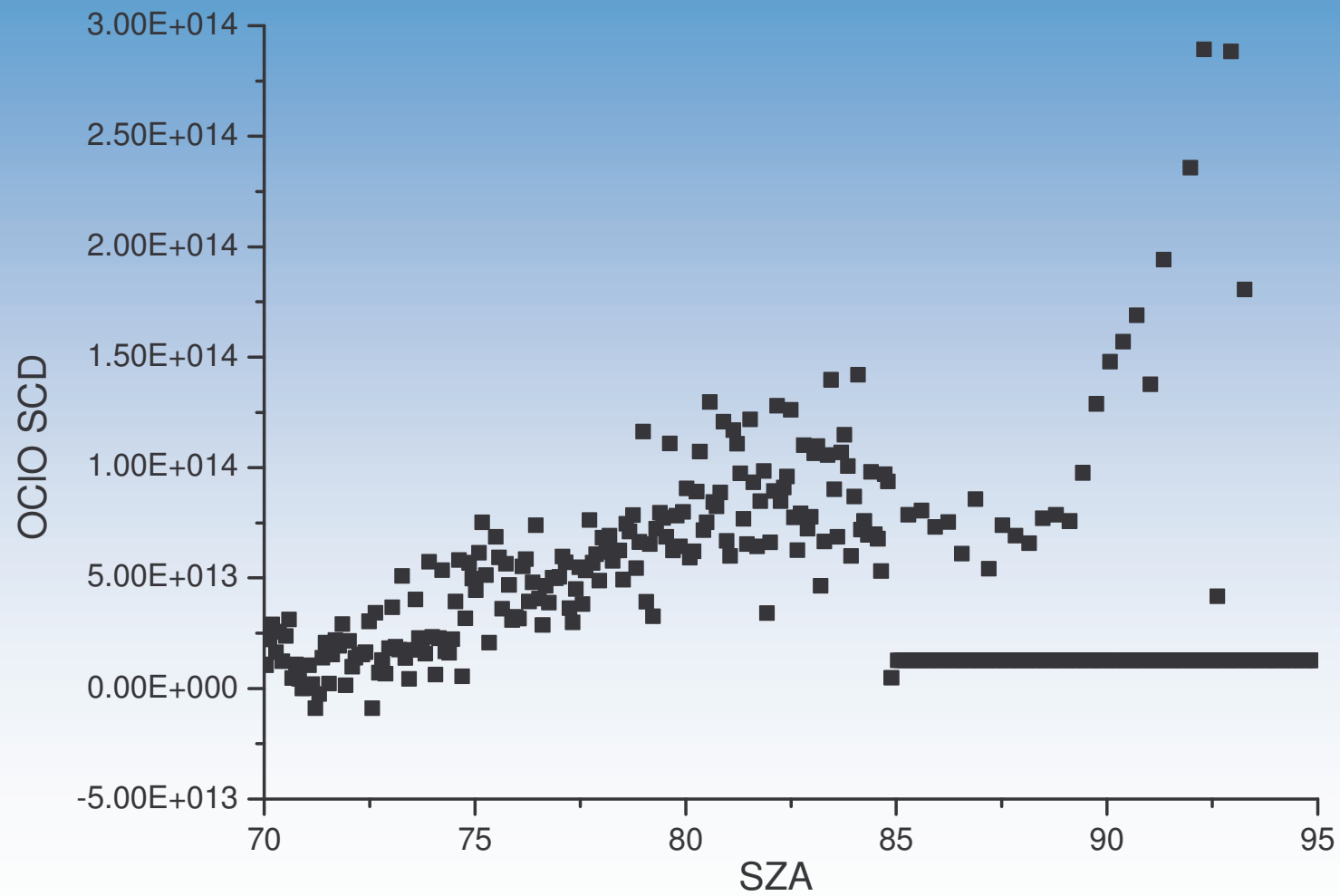


22 JAN 1997



[10^{14} molec/cm²]





Case Studies

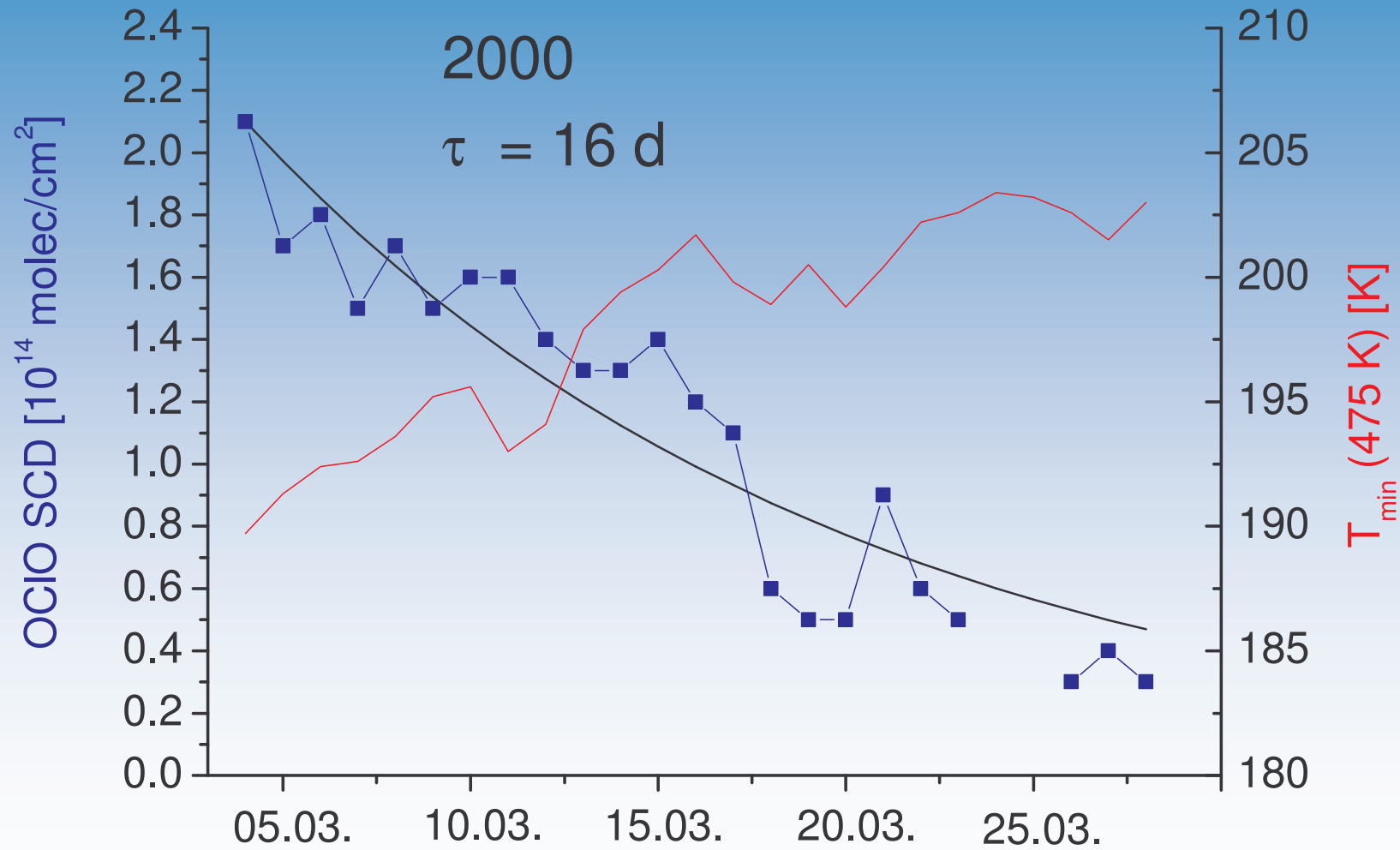
OC10 in the Activation Phase

Comparison to Slimcat

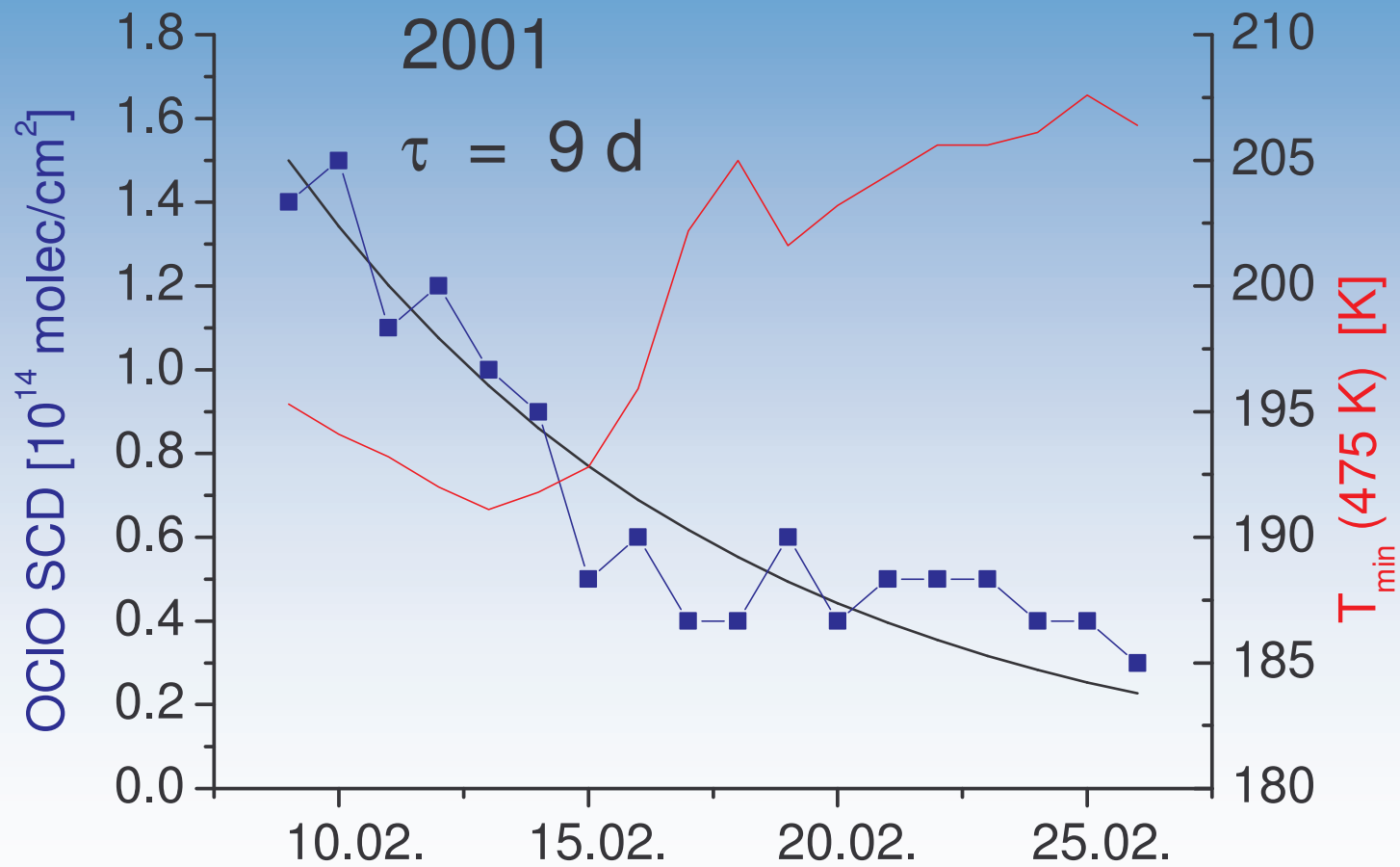
Activation by stratospheric
mountain waves

OC10 in the deactivation phase

OC10 in the Deactivation Phase



OCIO in the Deactivation Phase



Deactivation Time

Arctic

1996 : 14 days

1997 : 8

2000 : 16

2001 : 9

Antarctic

1996 : 20 days

1997 : 23

1998 : 18

1999 : 21

Summary

- SCDs of OClO anticorrelated to T_{\min} at 475 K, increase for temperatures < 195 K
- OClO good indicator for stratospheric chlorine activation
- Significant increase of OClO SCDs due to mountain waves
- Time for deactivation related to degree of denitrification

Outlook

GOME:

Relation of OC10 SCDs to PSC area
and ozone depletion

SCIAMACHY:

Vertical Profile of OC10

Relation of PSCs to OC10 SCDs

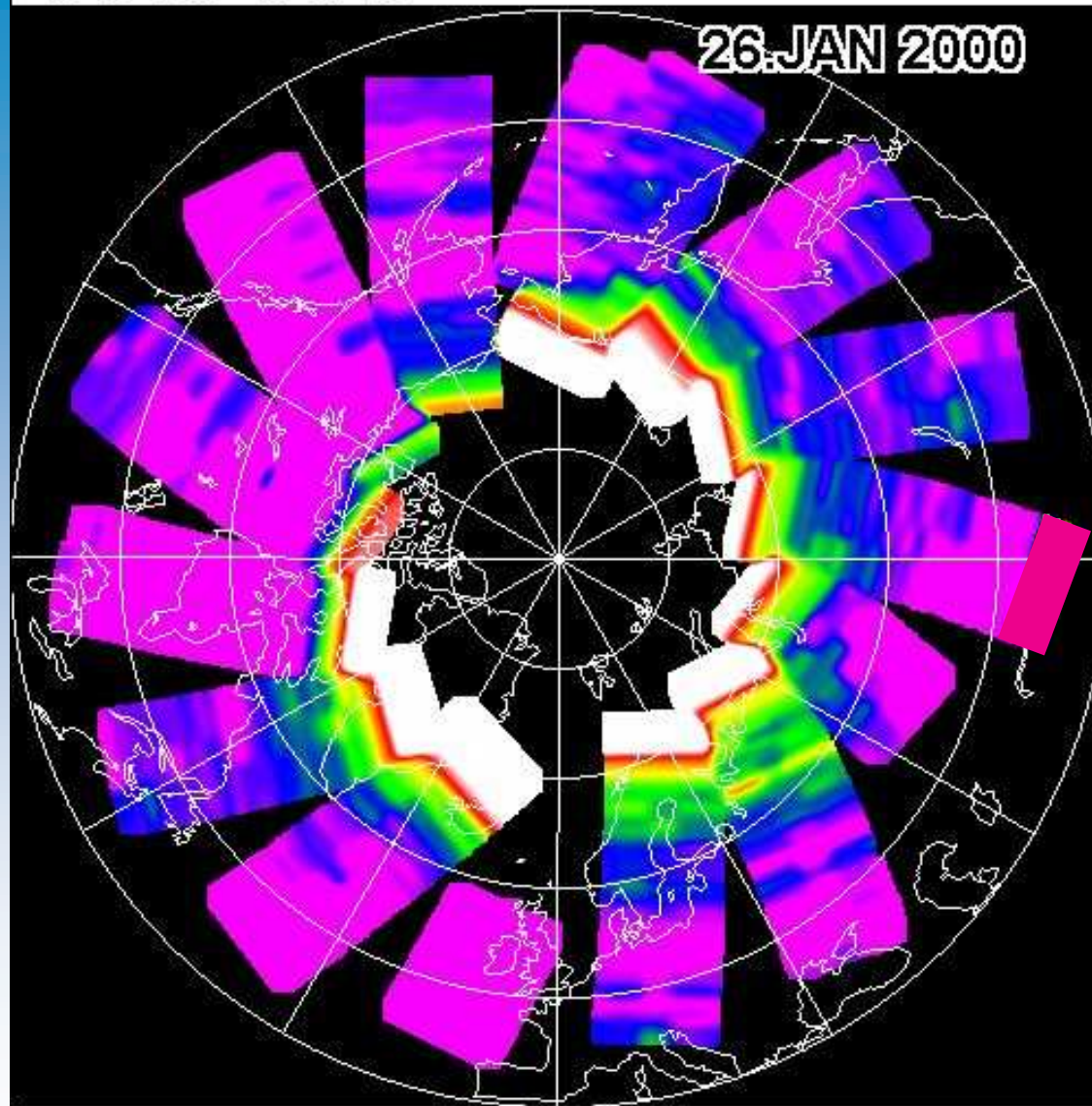
Retrieval of ClO ?



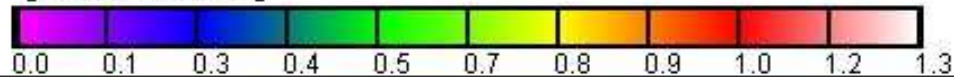


OCIO SCD

26.JAN 2000

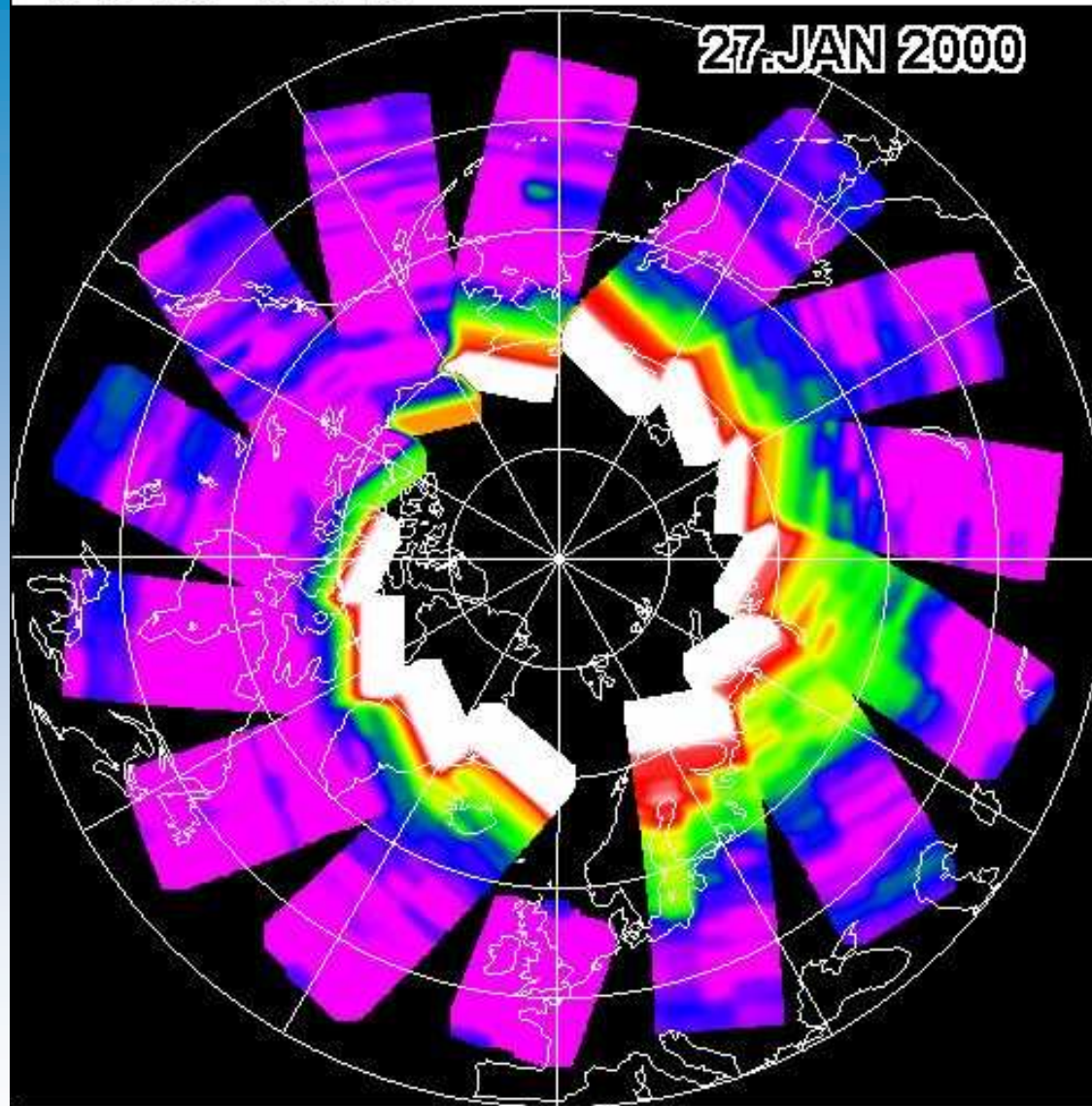


[10^{14} molec/cm²]

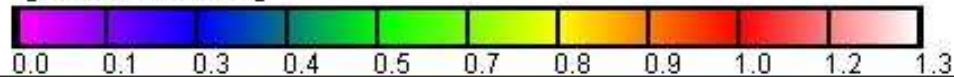


OCIO SCD

27 JAN 2000

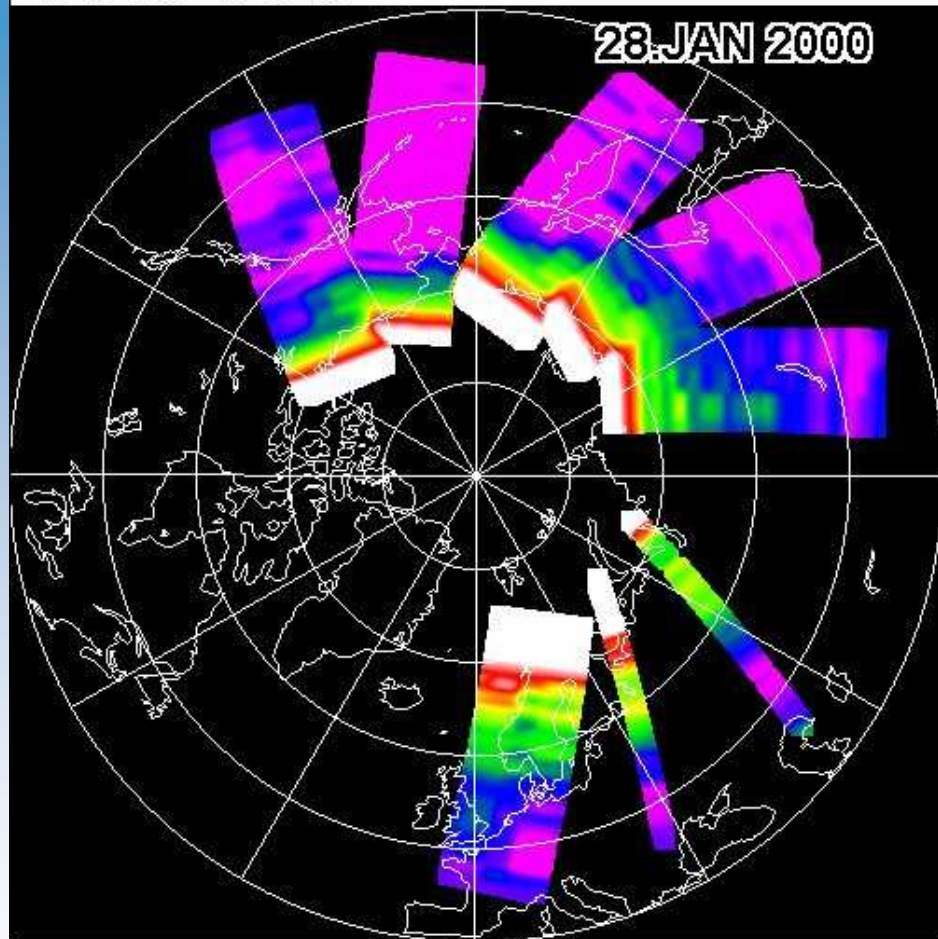


[10^{14} molec/cm²]

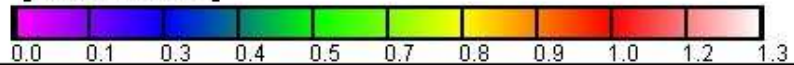


OCIO SCD

28.JAN 2000

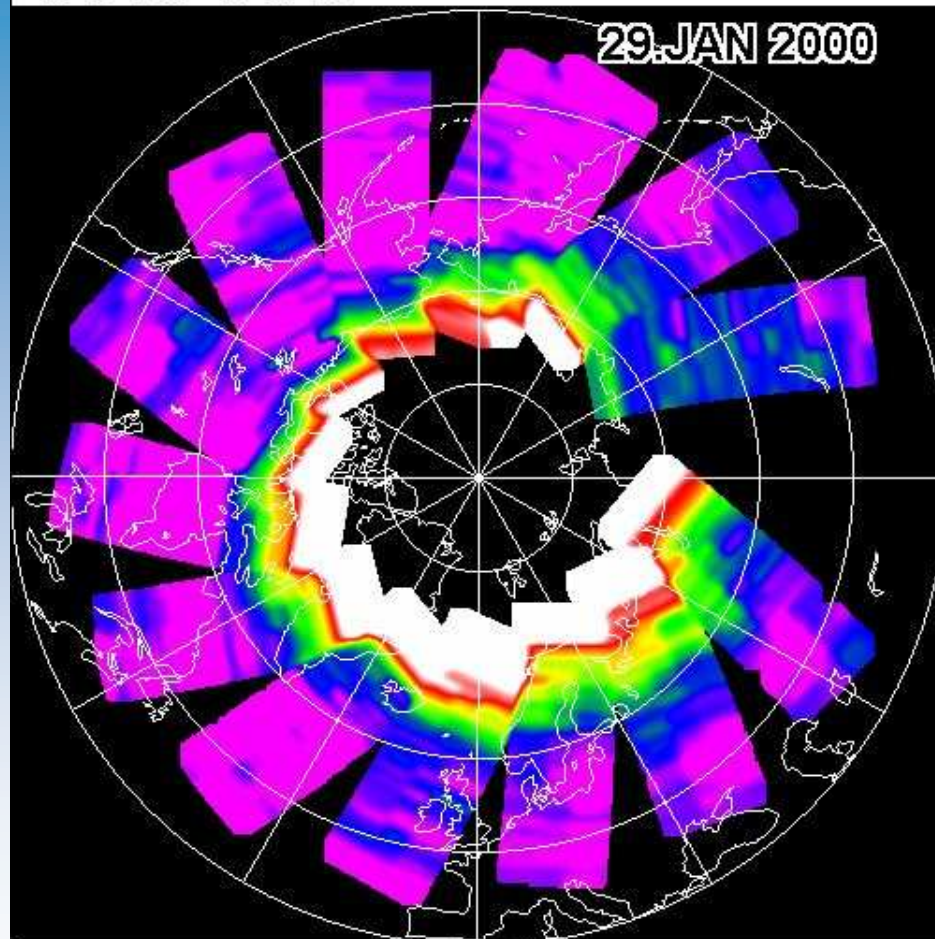


[10^{14} molec/cm²]

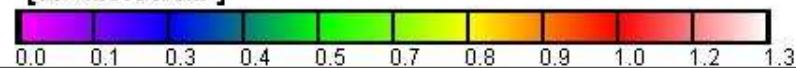


OCIO SCD

29.JAN 2000



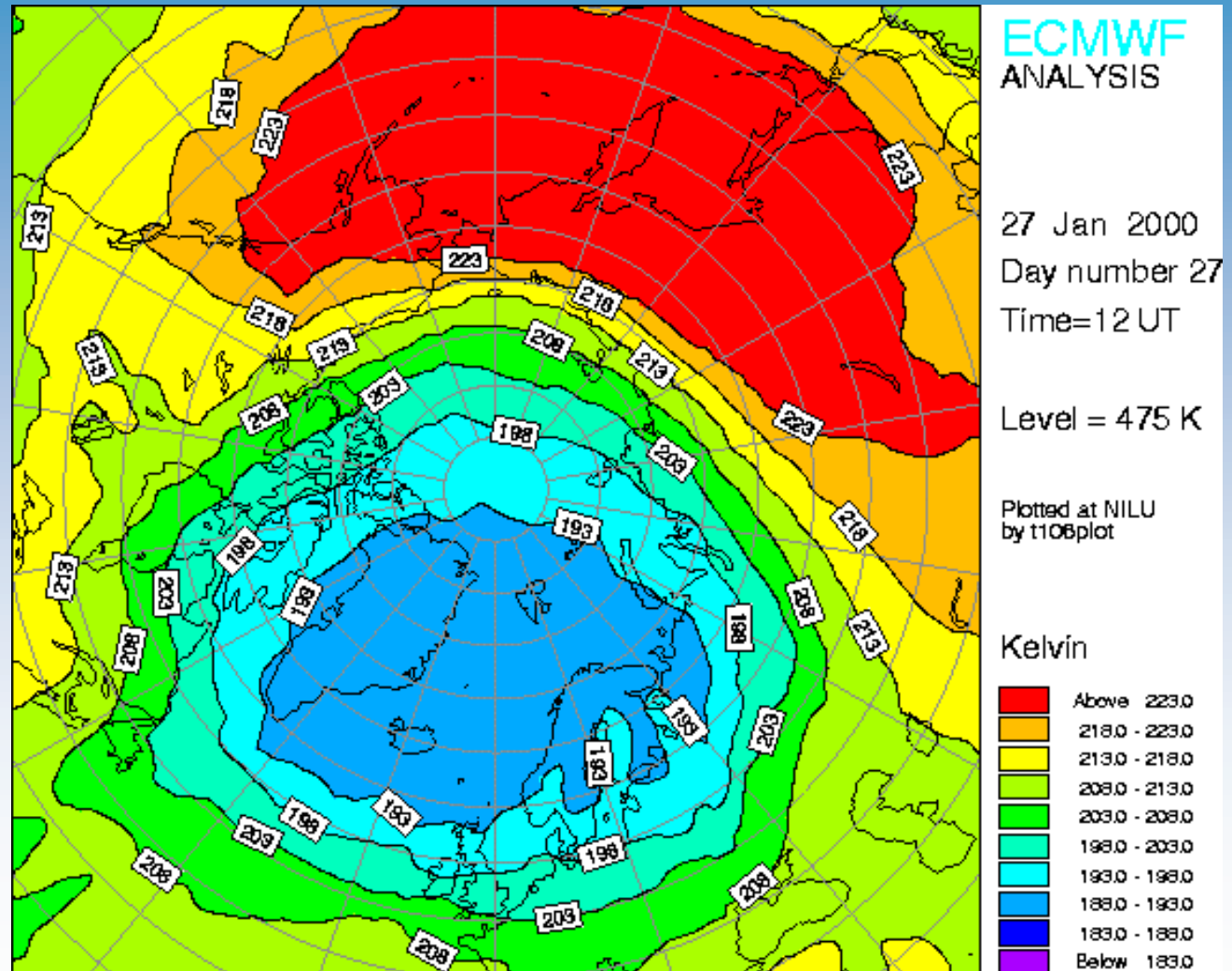
[10^{14} molec/cm²]



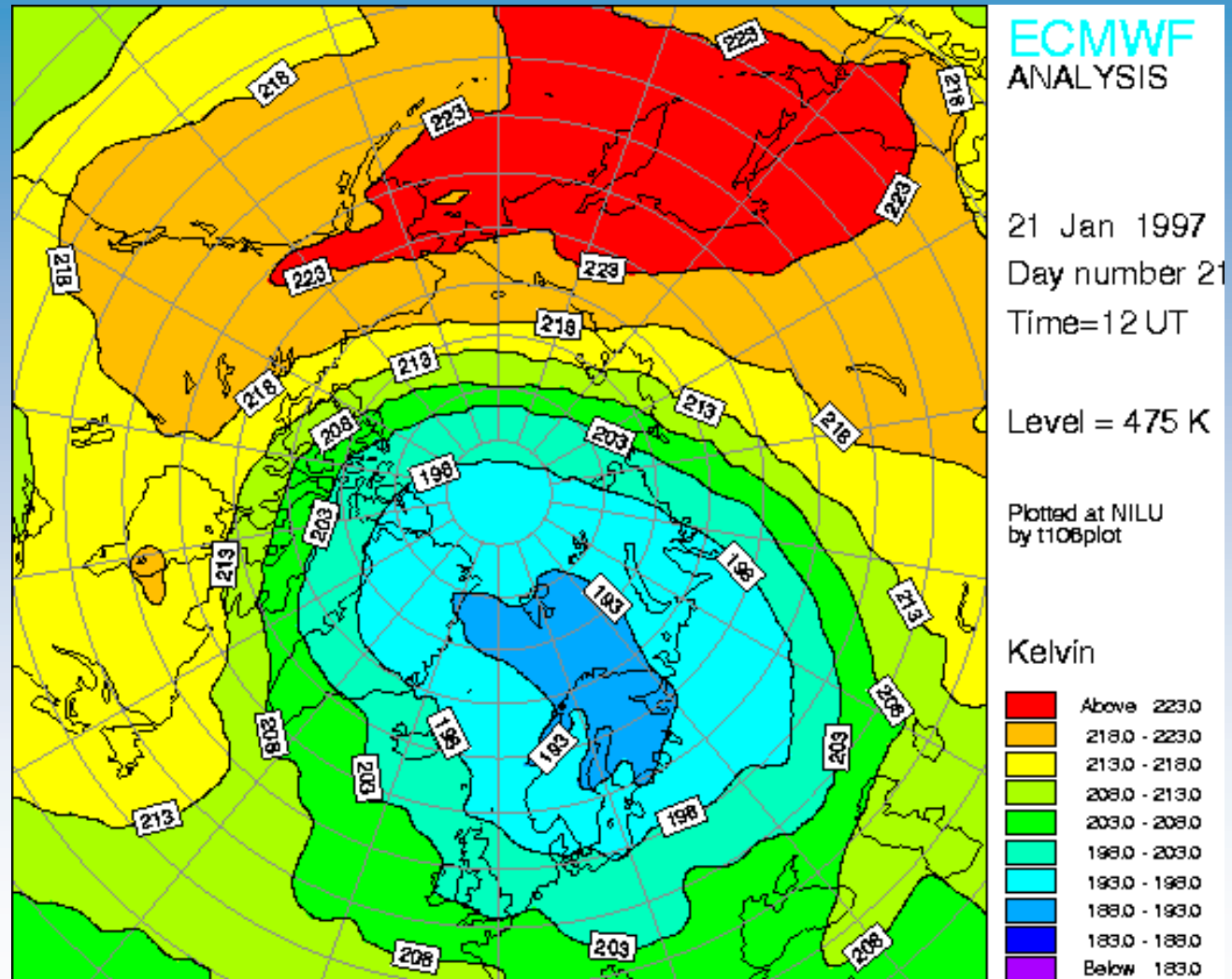
27. Januar 2000

$T > 188 \text{ K}$

aber : PSC 2
über Esrange



21. Januar 1997



ECMWF

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MM5

1.125° x 1.125°

15 km x 15 km

