

Marine Stratus & Stratocumulus

Stratus



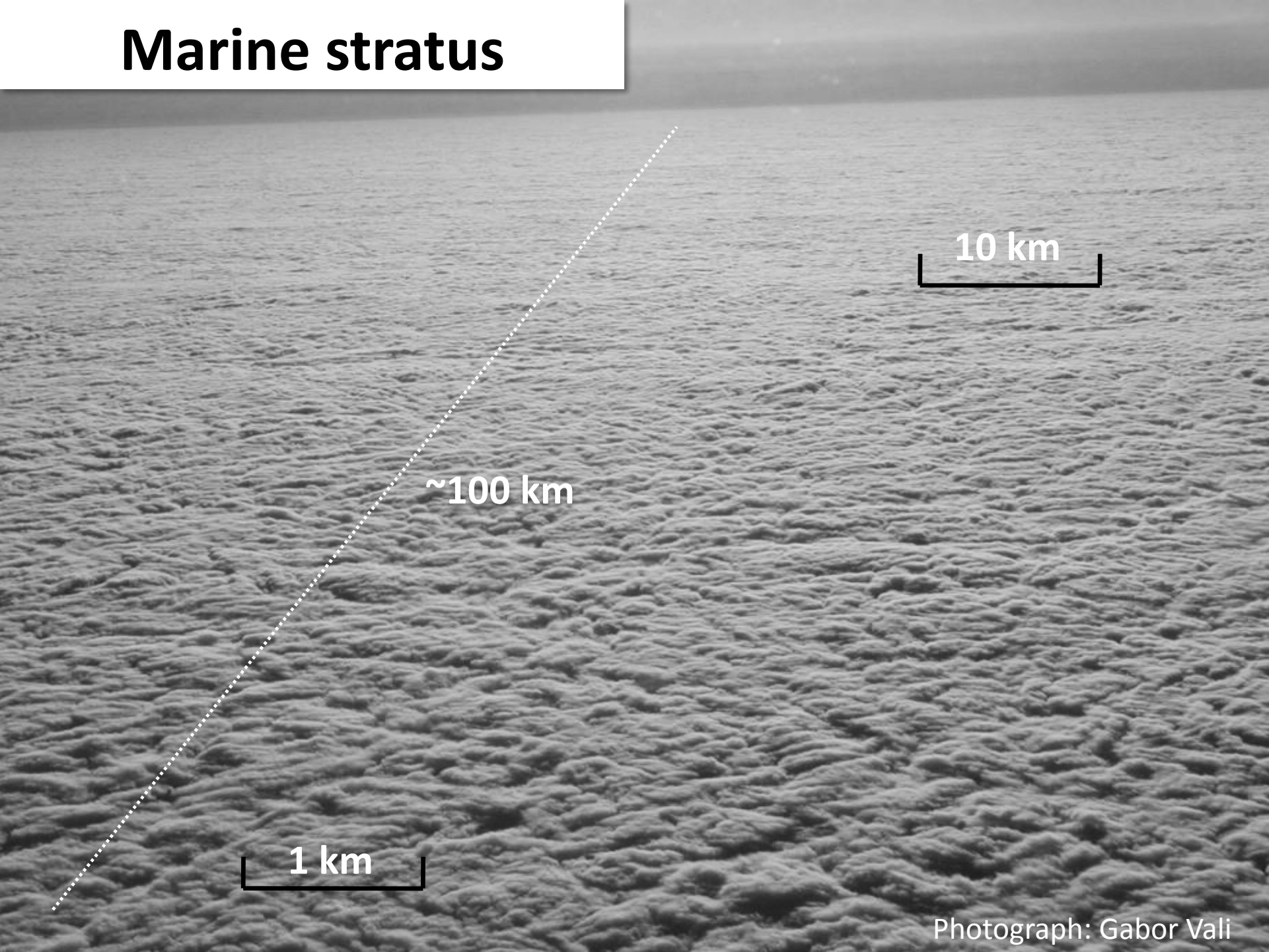
Almost solid cloud layer

Stratocumulus



Sun shining through breaks in cloud layer

Marine stratus



10 km

~100 km

1 km

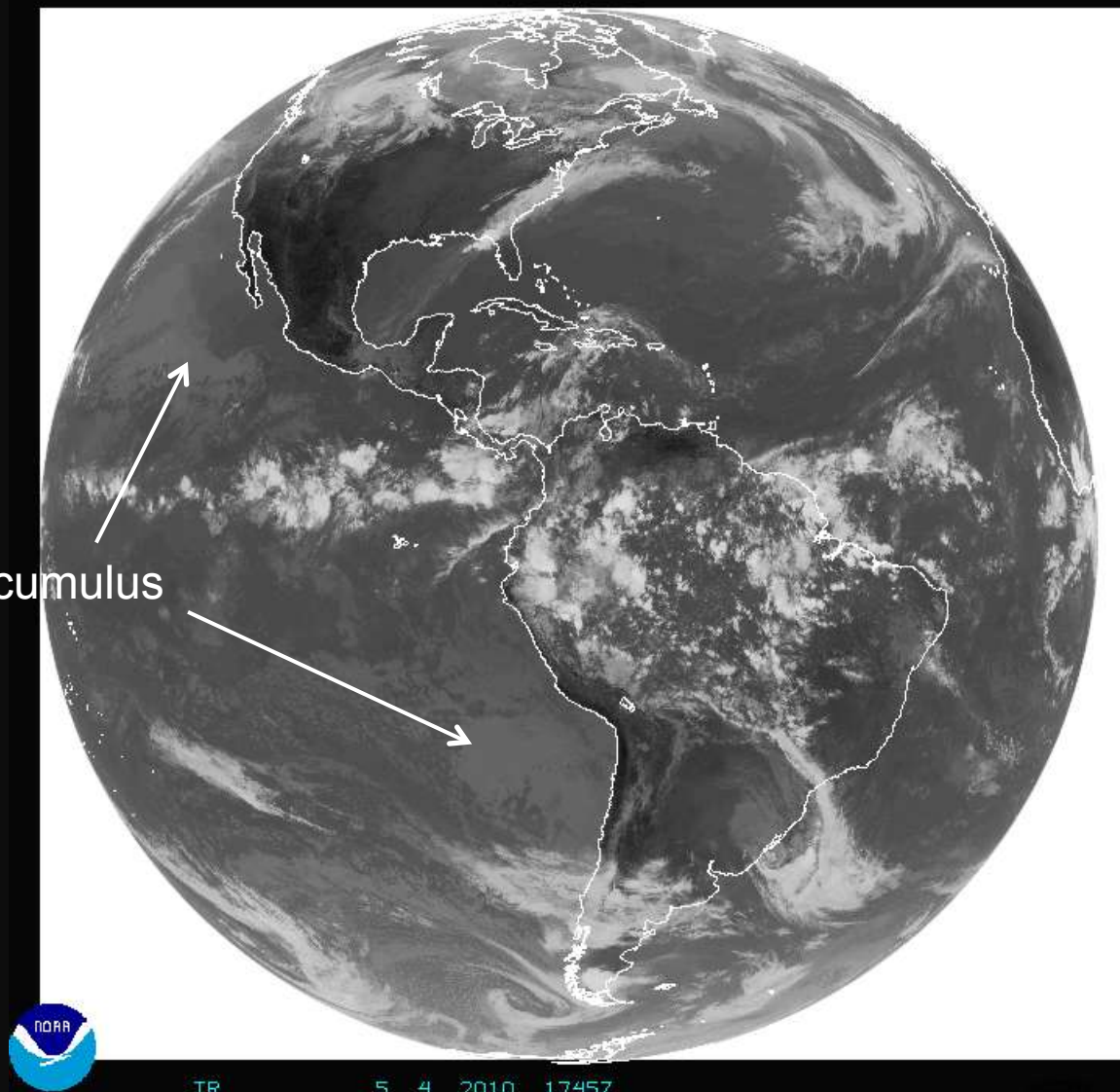
Photograph: Gabor Vali

Marine stratocumulus

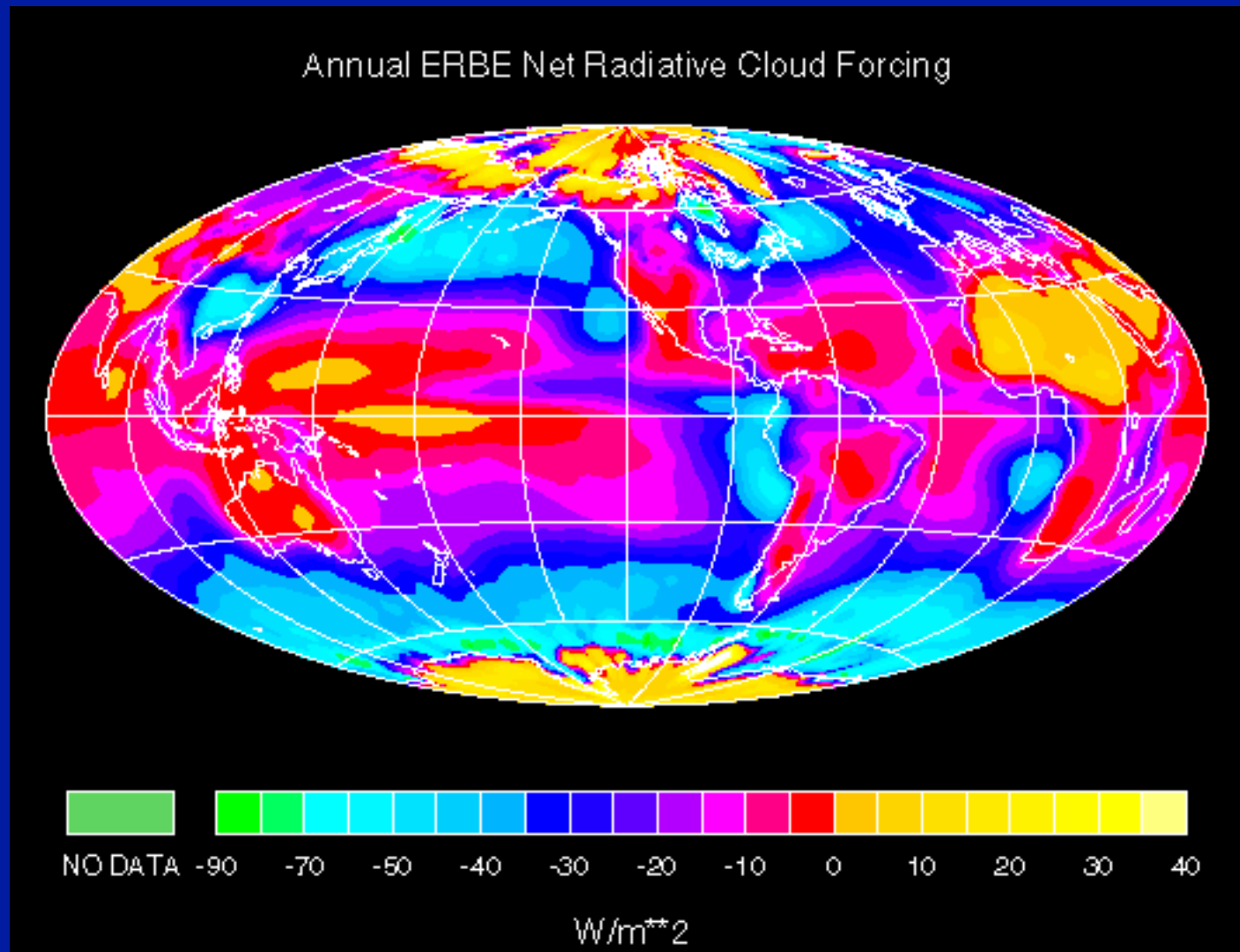


VISIBLE 5 4 2010 1745Z

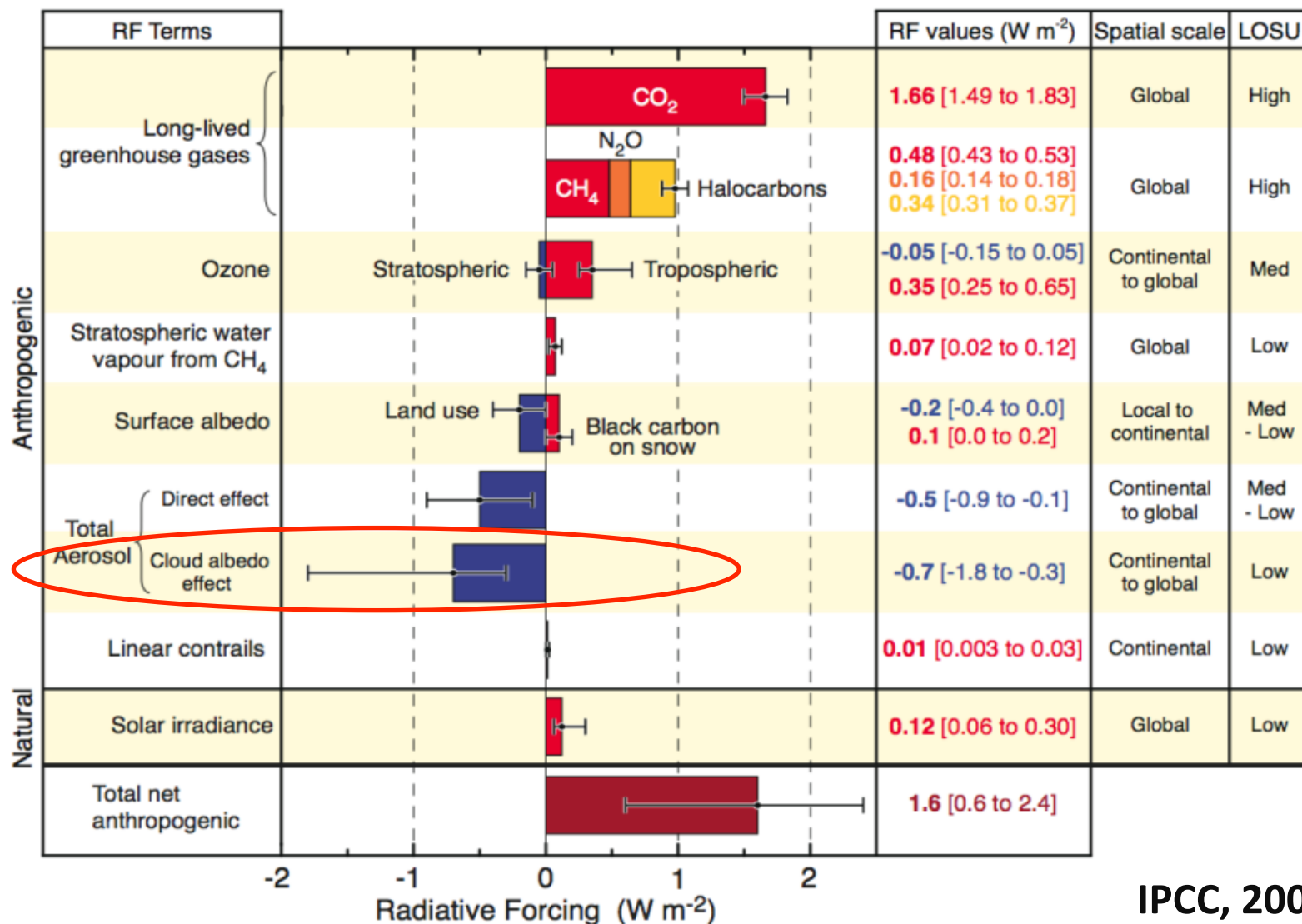
Marine stratocumulus



Stratus & Stratocumulus



Radiative Forcing Components



©IPCC 2007: WG1-AR4

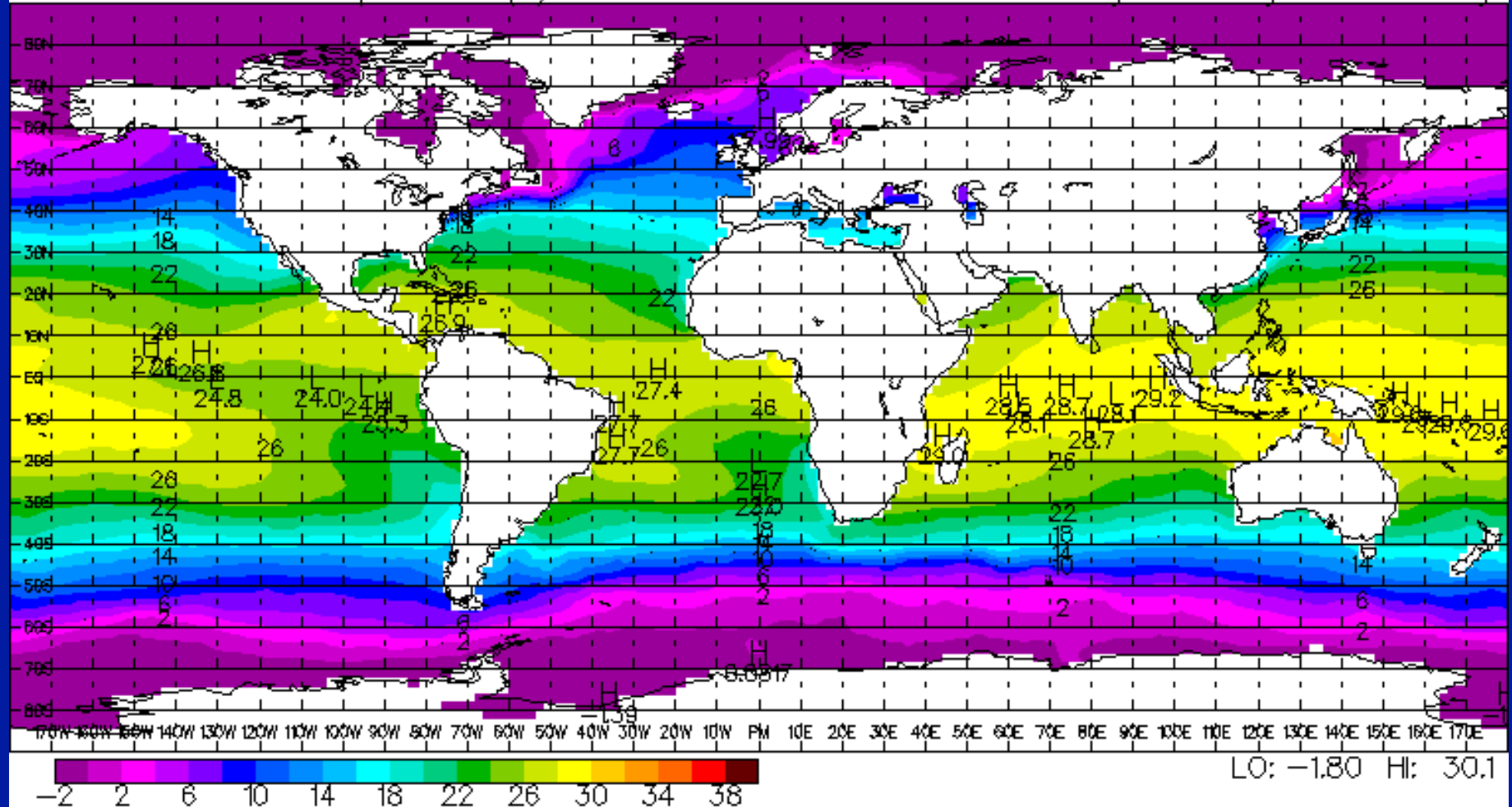
IPCC, 2007

SST Climatology (January)

Plymouth State College (PSC) Weather Center

Global Sea Surface Temperatures (C)

Mean Monthly SST Analysis for January

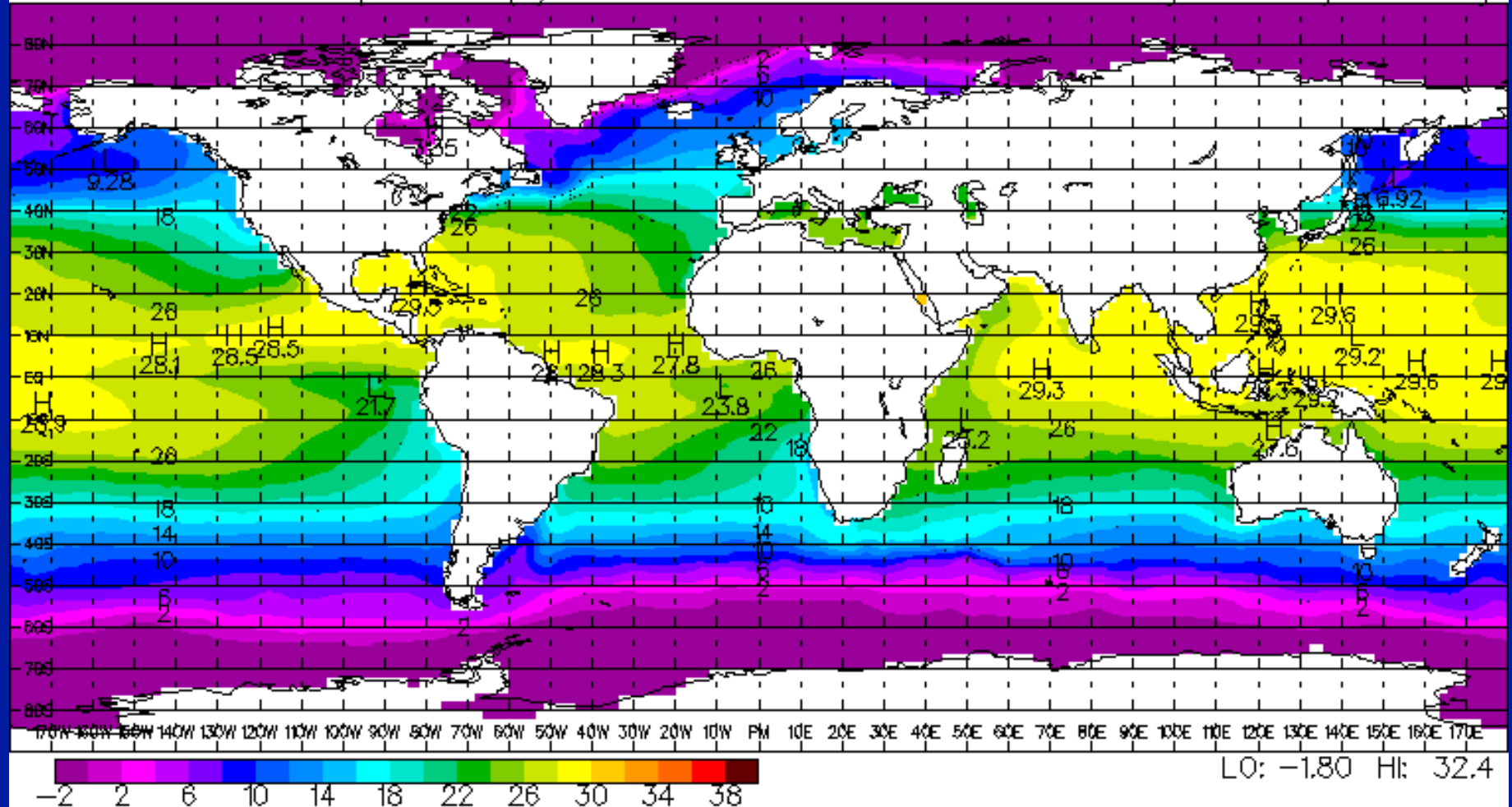


SST Climatology (July)

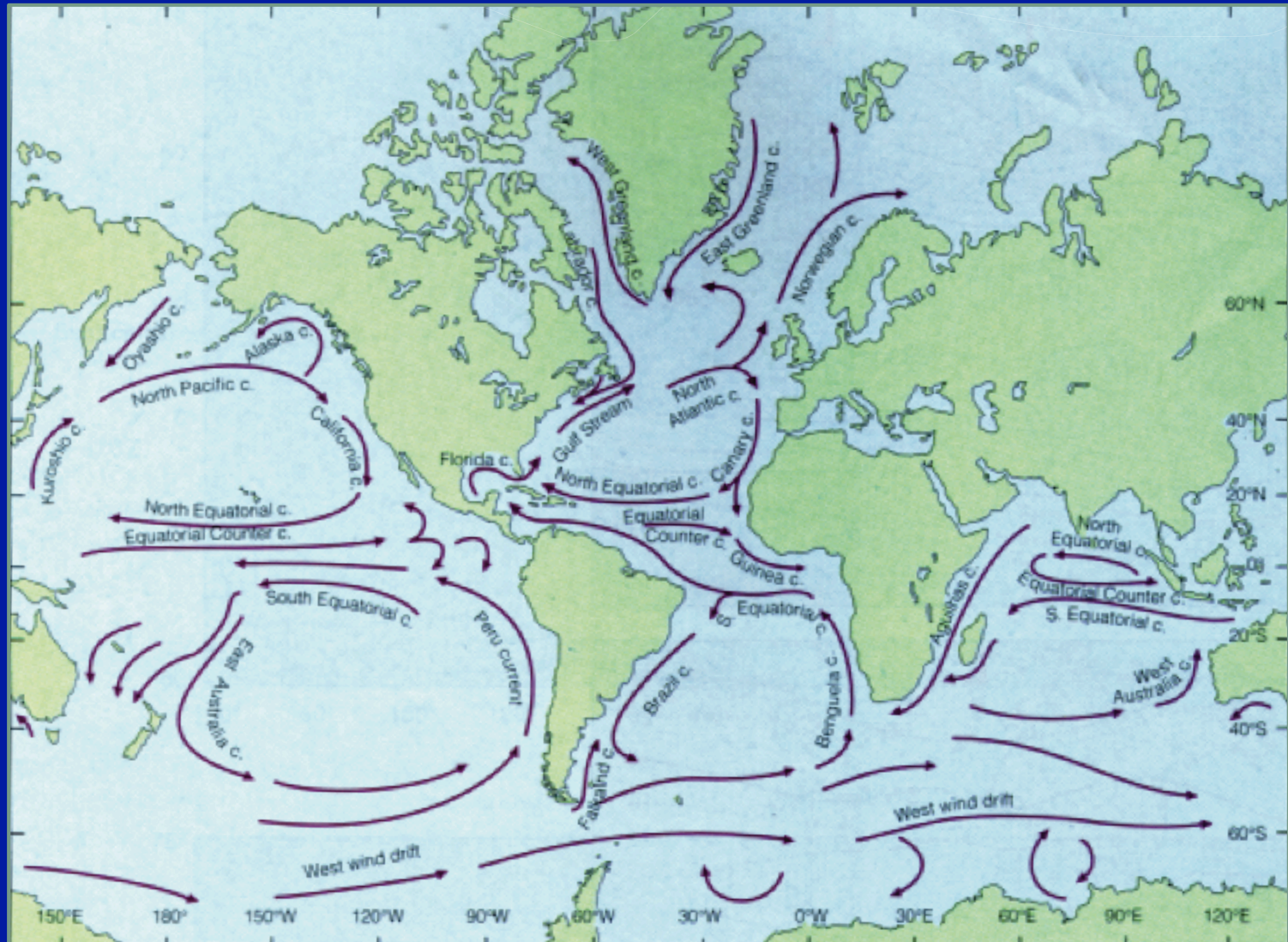
Plymouth State College (PSC) Weather Center

Global Sea Surface Temperatures (C)

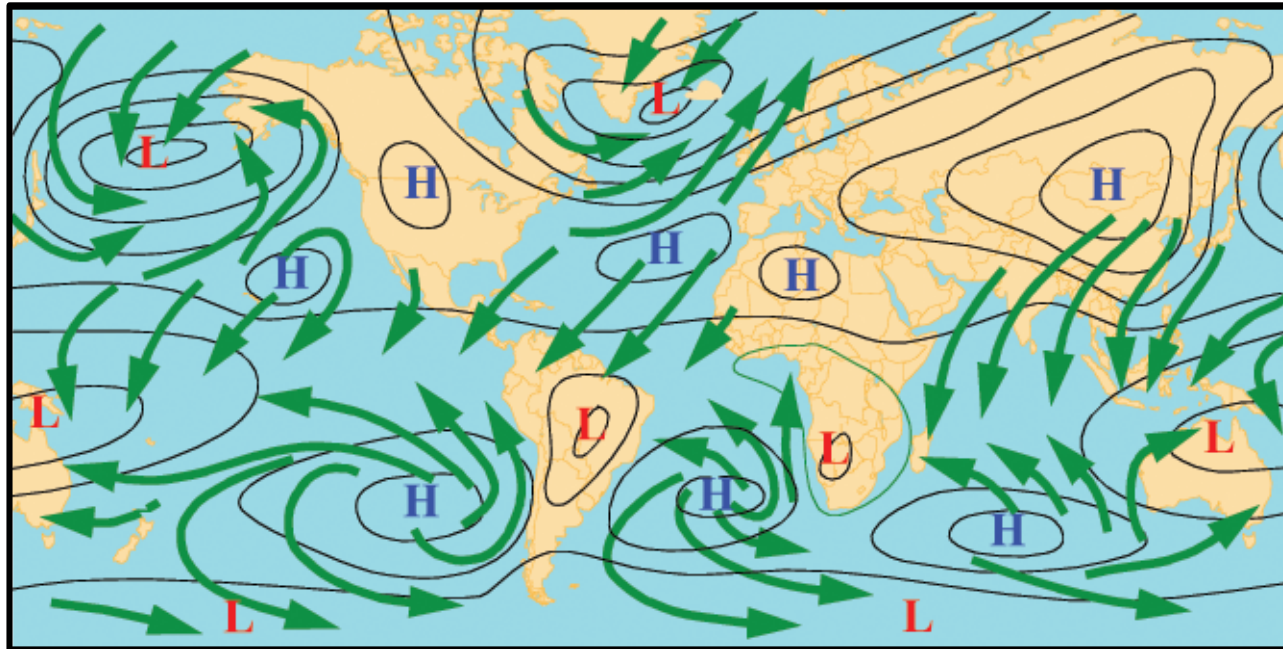
Mean Monthly SST Analysis for July



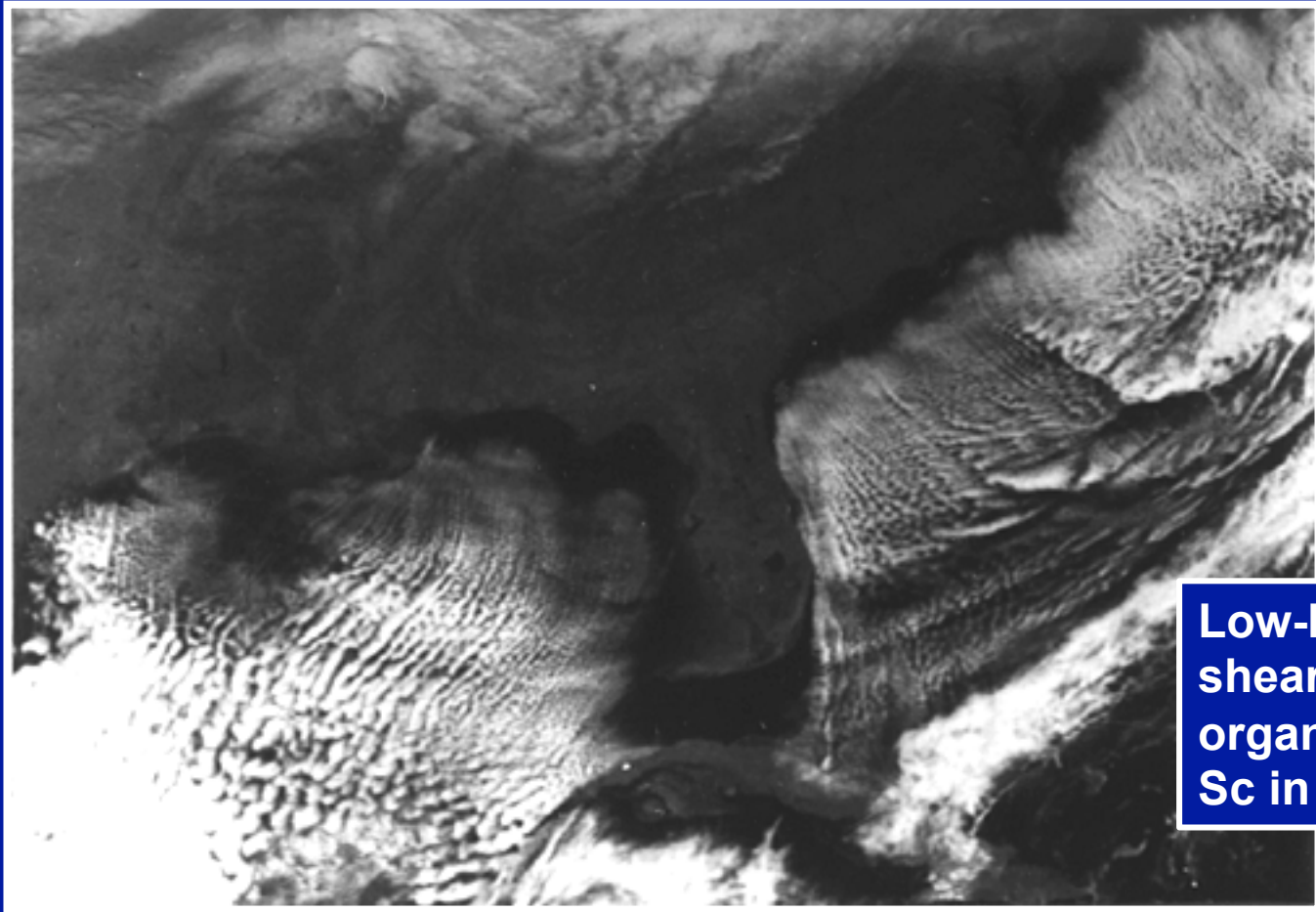
Ocean currents



January Surface Pressure and Wind

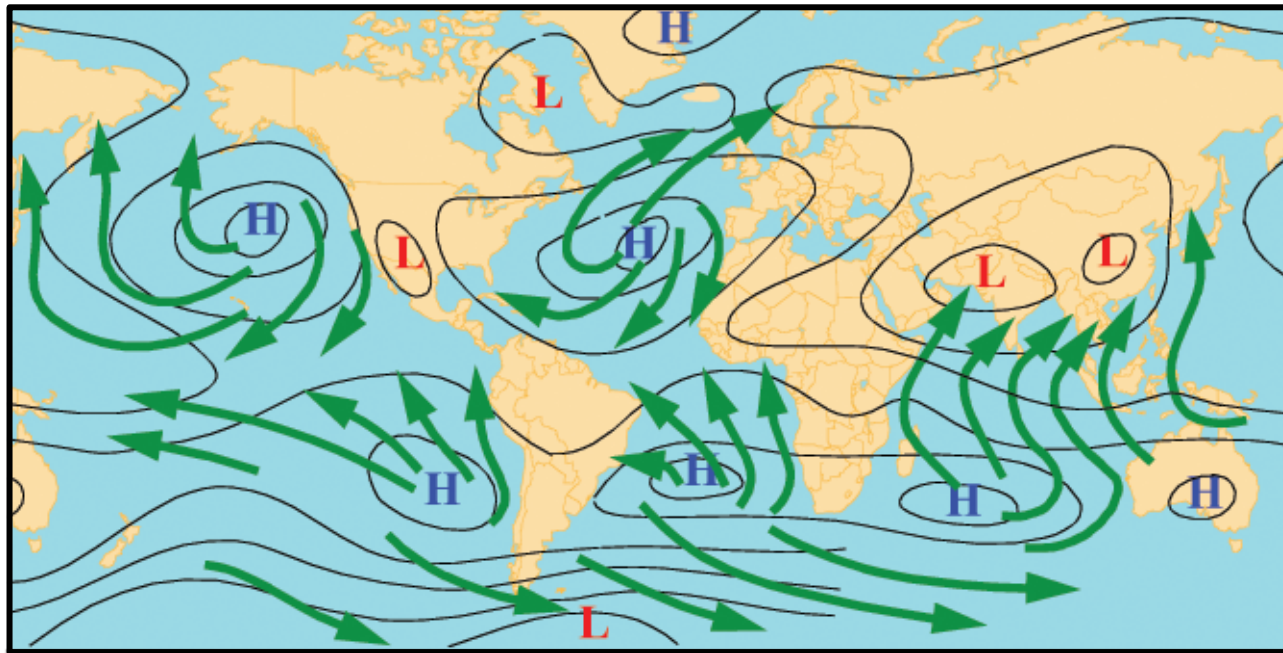


Cloud streets in cold air flowing off cold land mass



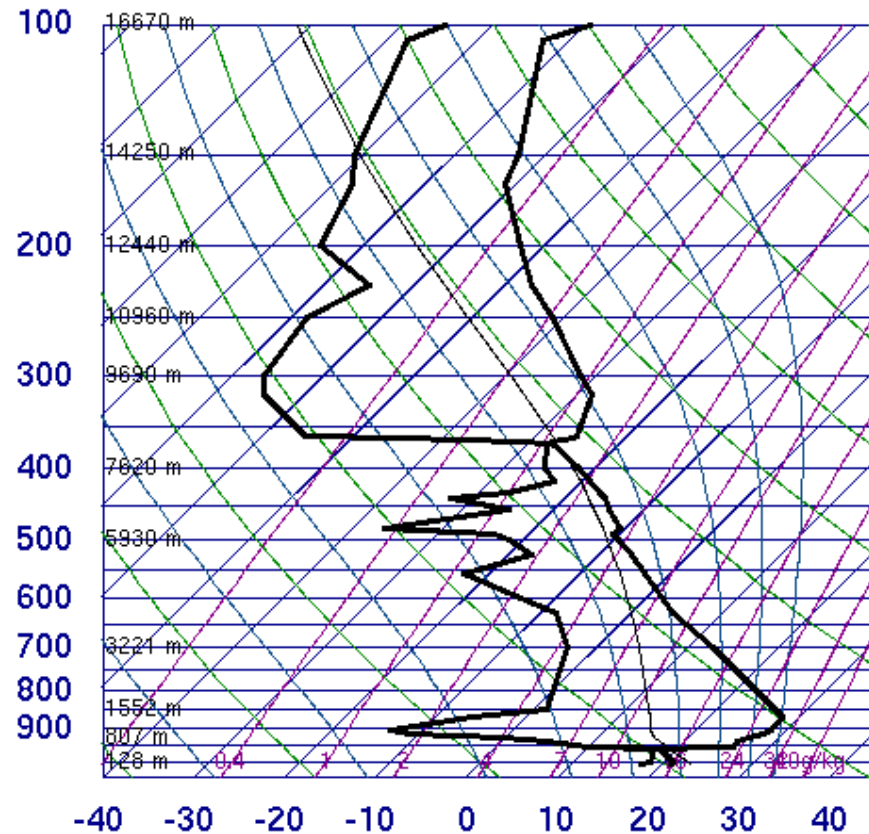
Low-level
shear helps to
organize the
Sc in lines

July Surface Pressure and Wind



Stratocumulus Regime

60018 Guimar-Tenerife

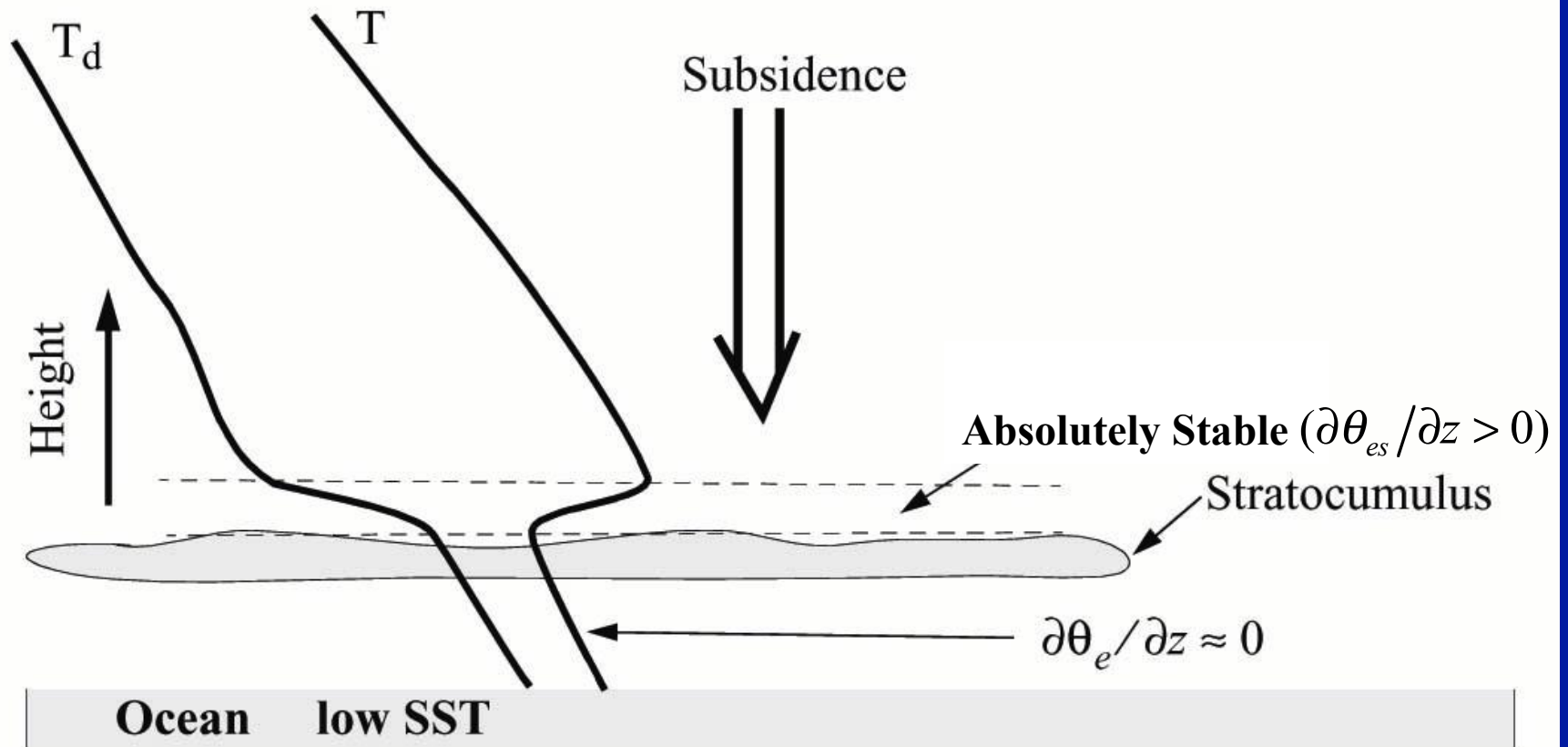


SLAT	28.46
SLON	-16.37
SELV	105.0
SHOW	1.87
LIFT	1.09
LFTV	0.77
SWET	39.80
KINX	21.30
CTOT	10.90
VTOT	35.90
TOTL	46.80
CAPE	3.18
CAPV	3.48
CINS	-1469
CINV	-1317
EQLV	366.4
EQTV	366.4
LFCT	383.0
LFCV	383.8
BRCH	2.08
BRCV	2.27
LCLT	288.7
LCLP	917.9
MLTH	295.9
MLMR	12.49
THCK	5802
PWAT	24.15

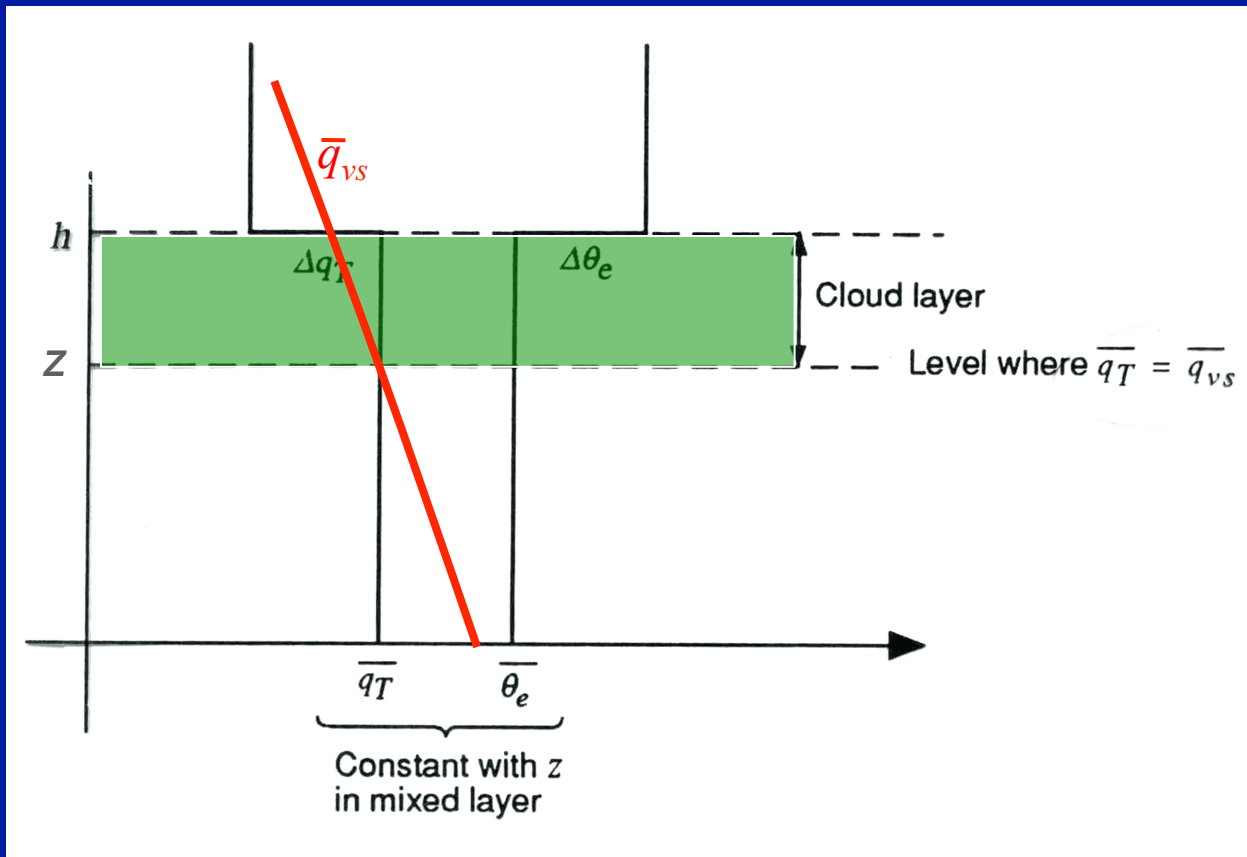
00Z 05 Aug 2008

University of Wyoming

Subtropical stratocumulus sounding



Idealized mixed layer



Equations governing non-precipitating mixed layer stratus

$$\frac{d\bar{q}_T}{dt} = \frac{w_e \Delta \bar{q}_T + \bar{q}_{T0}}{h}$$

$$\frac{d\bar{\theta}_e}{dt} = \frac{w_e \Delta \bar{\theta}_e + \bar{\theta}_{e0} - R_h - R_o}{h}$$

$$\frac{dh}{dt} = w_e + w(h)$$