

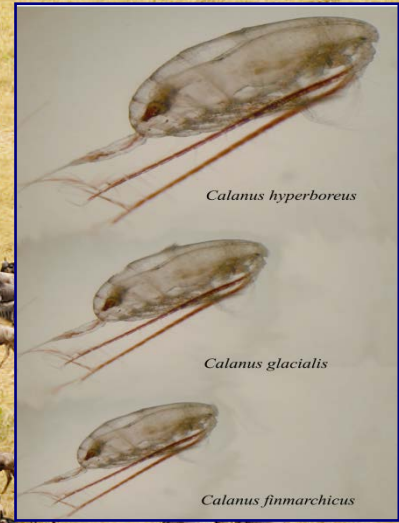
Werewolves in the
dark - moonlight
structures Arctic
zooplankton
communities in space
and time during the
polar night

Kim Last, Laura Hobbs
Finlo Cottier, Colin Griffiths
Jorgen Berg

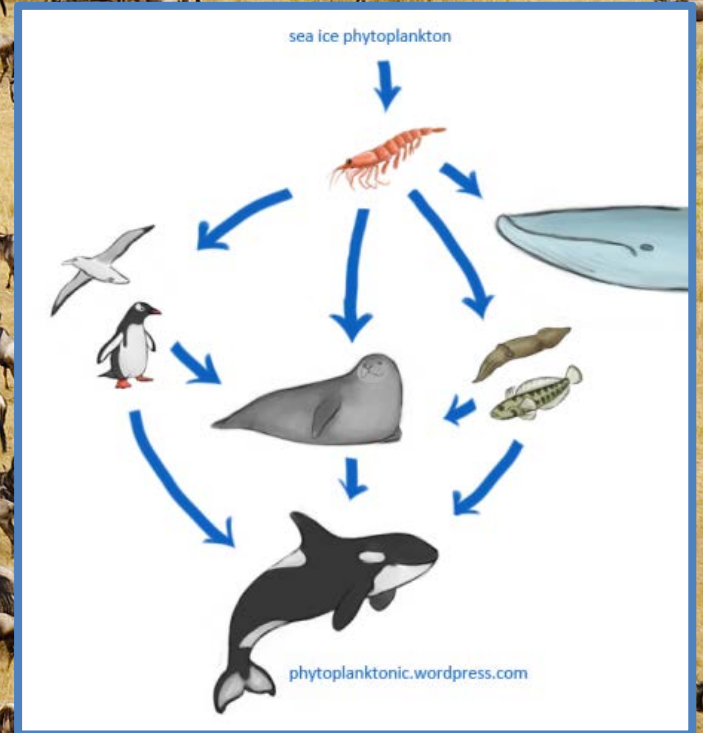


214271



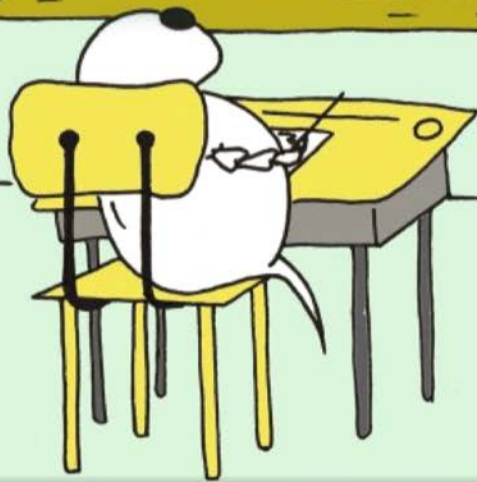
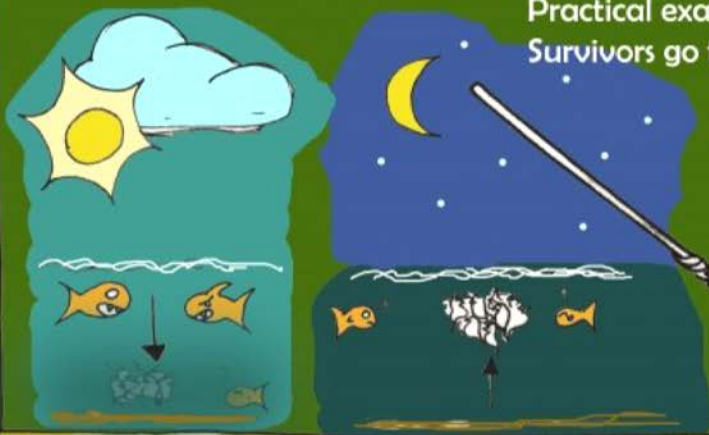


Heap of carbon



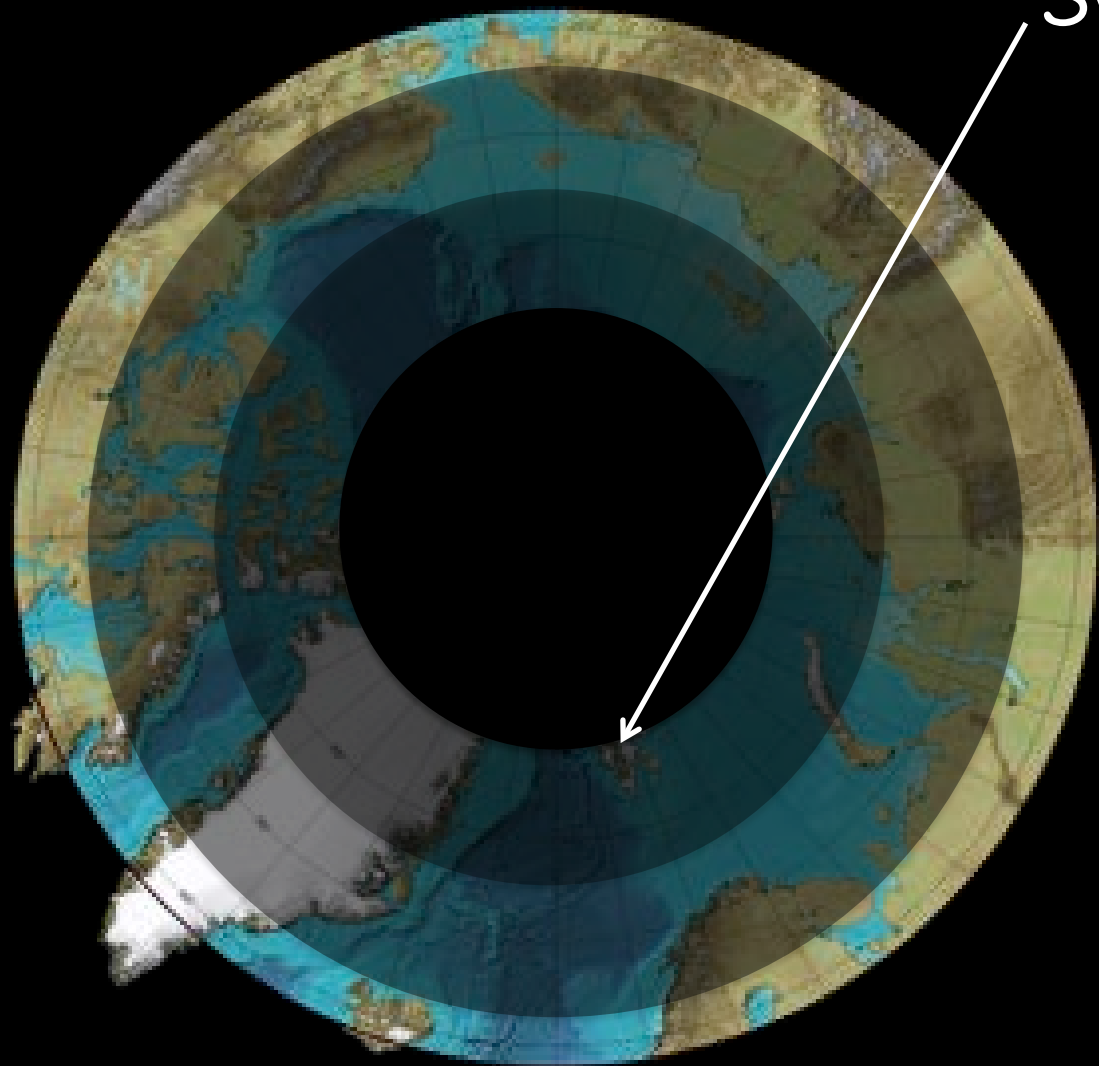
Principles of Migration

Practical exam on Friday
Survivors go to 2nd grade

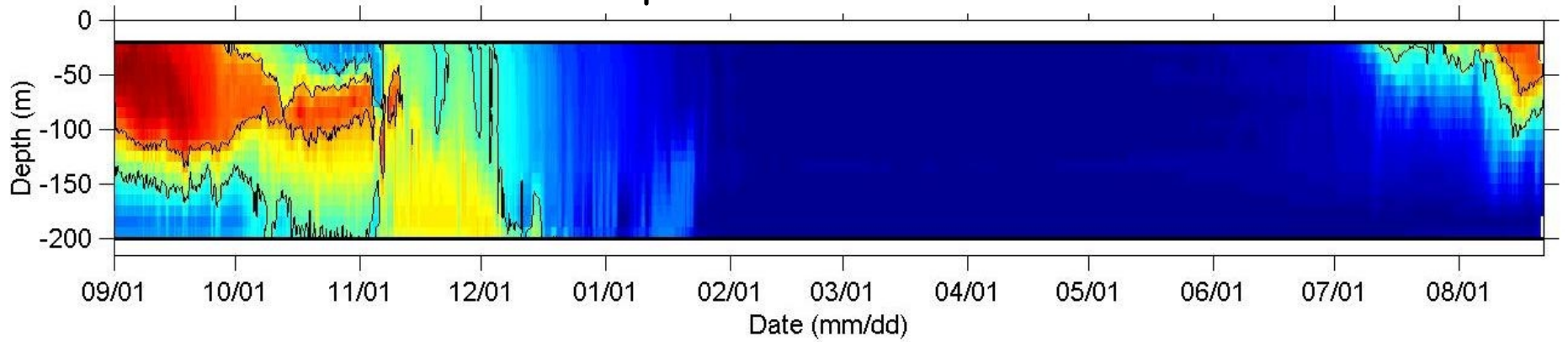


Walt

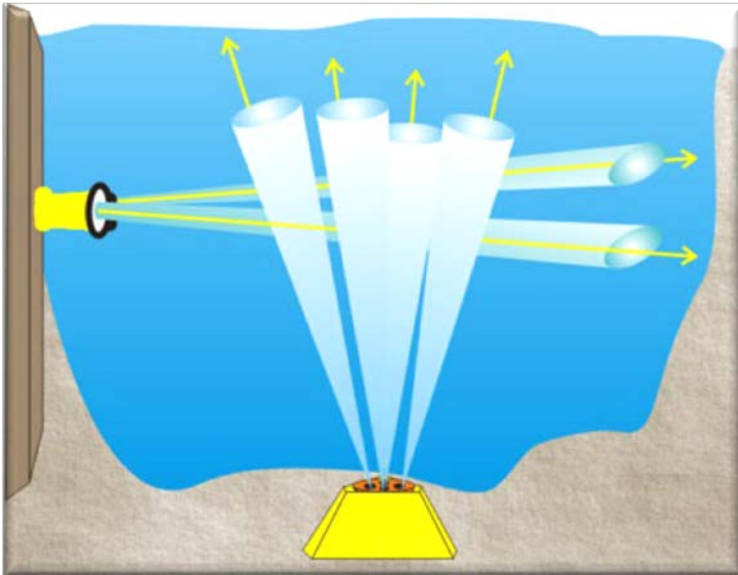
Svalbard



Temperature Profile 2006/7

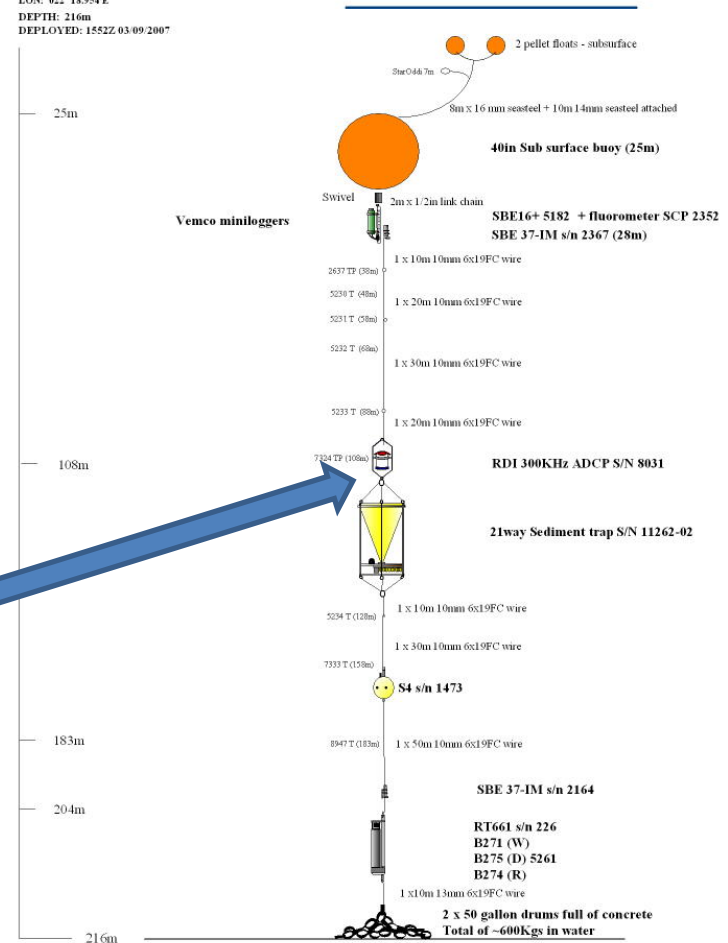


How to measure zooplankton migrations?

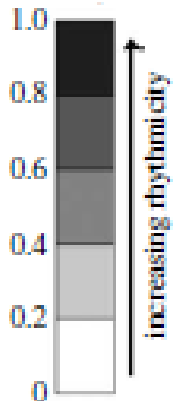
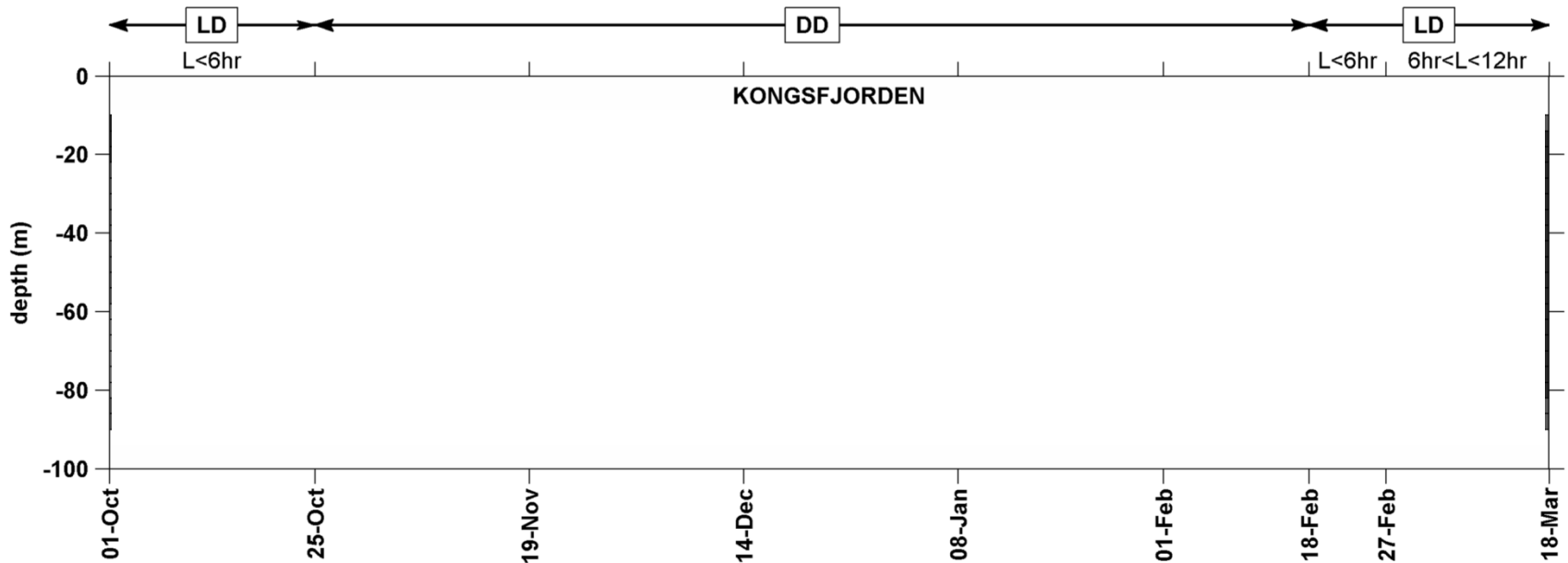


Ripfjorden 2007

LAT: 50° 16.889'N
 LON: 02° 18.954'E
 DEPTH: 216m
 DEPLOYED: 1552Z 03/09/2007



DVM throughout the polar night - right?



Generating a rhythmicity index for the circadian range

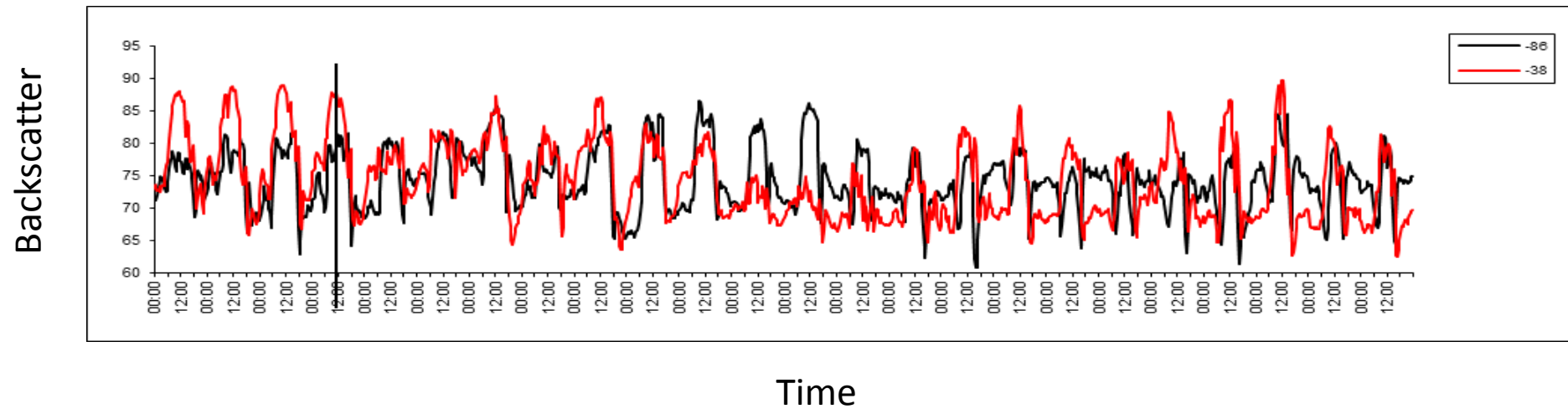
biology
letters
Marine biology

Biol. Lett.
doi:10.1098/rsbl.2008.0484
Published online

Diel vertical migration of Arctic zooplankton during the polar night

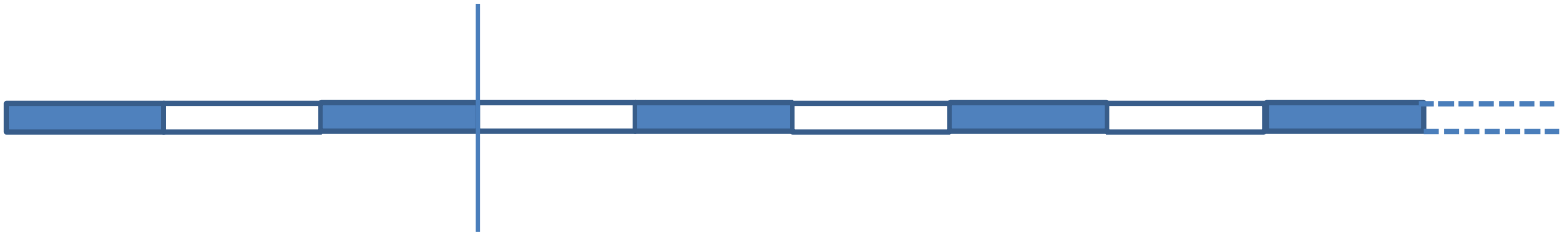
Jørgen Berge^{1,2,*}, Finlo Cottier², Kim S. Last², Øystein Varpe¹, Eva Leu³, Janne Søreide¹, Ketil Elvane⁴, Stig Falk-Petersen³, Kate Willis², Henrik Nygård¹, Daniel Vogedes¹, Colin Griffiths², Geir Johnsen^{1,5}, Dag Lorentzen¹ and Andrew S. Brierley⁵

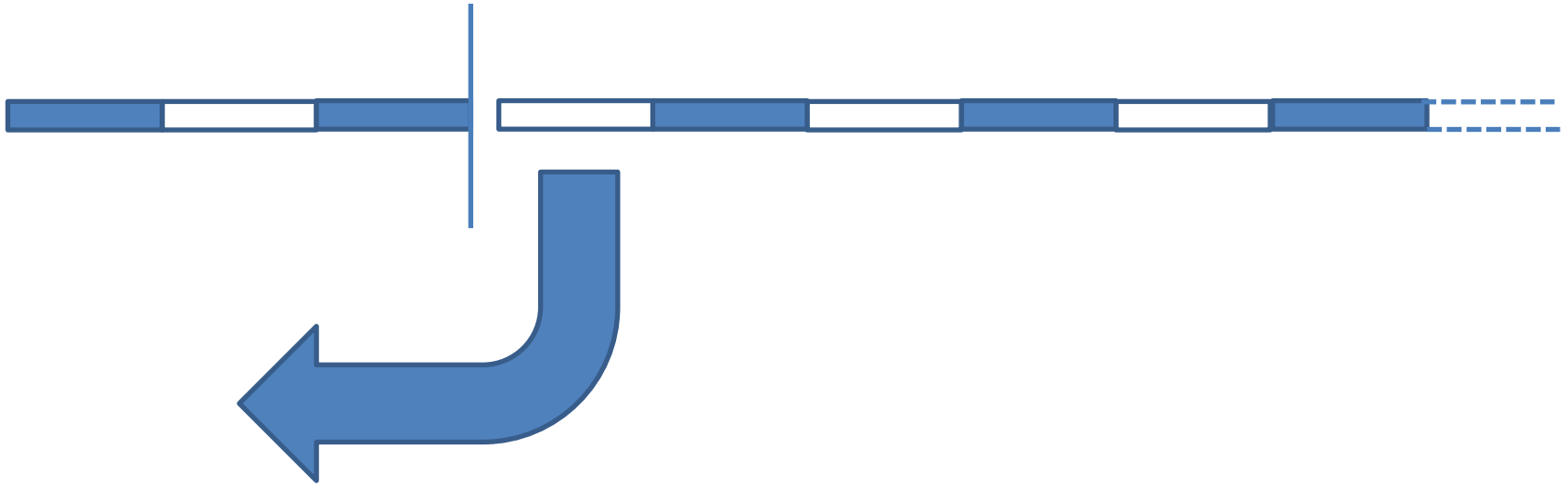
ADCP activity trace over time (here 23 days)



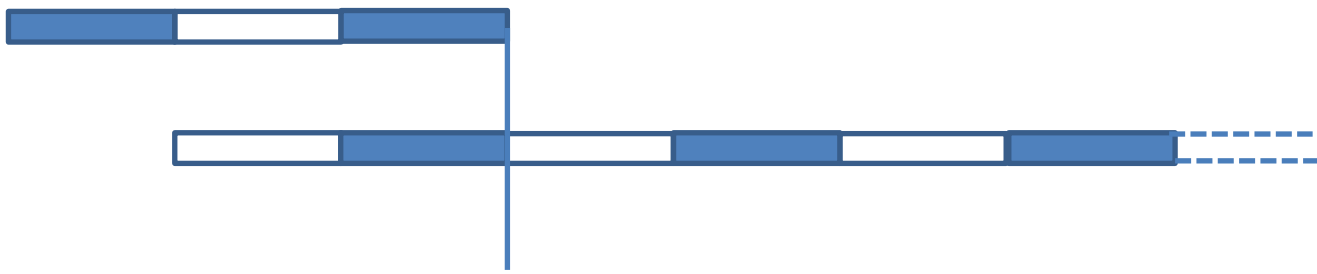
Visualizing ADCP data using double plotted actograms





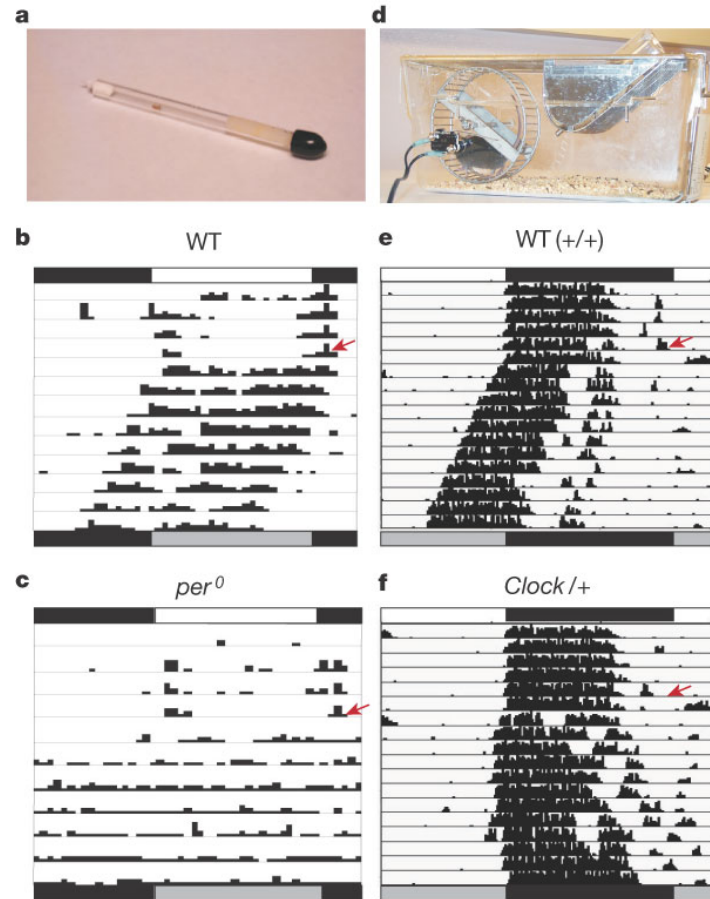






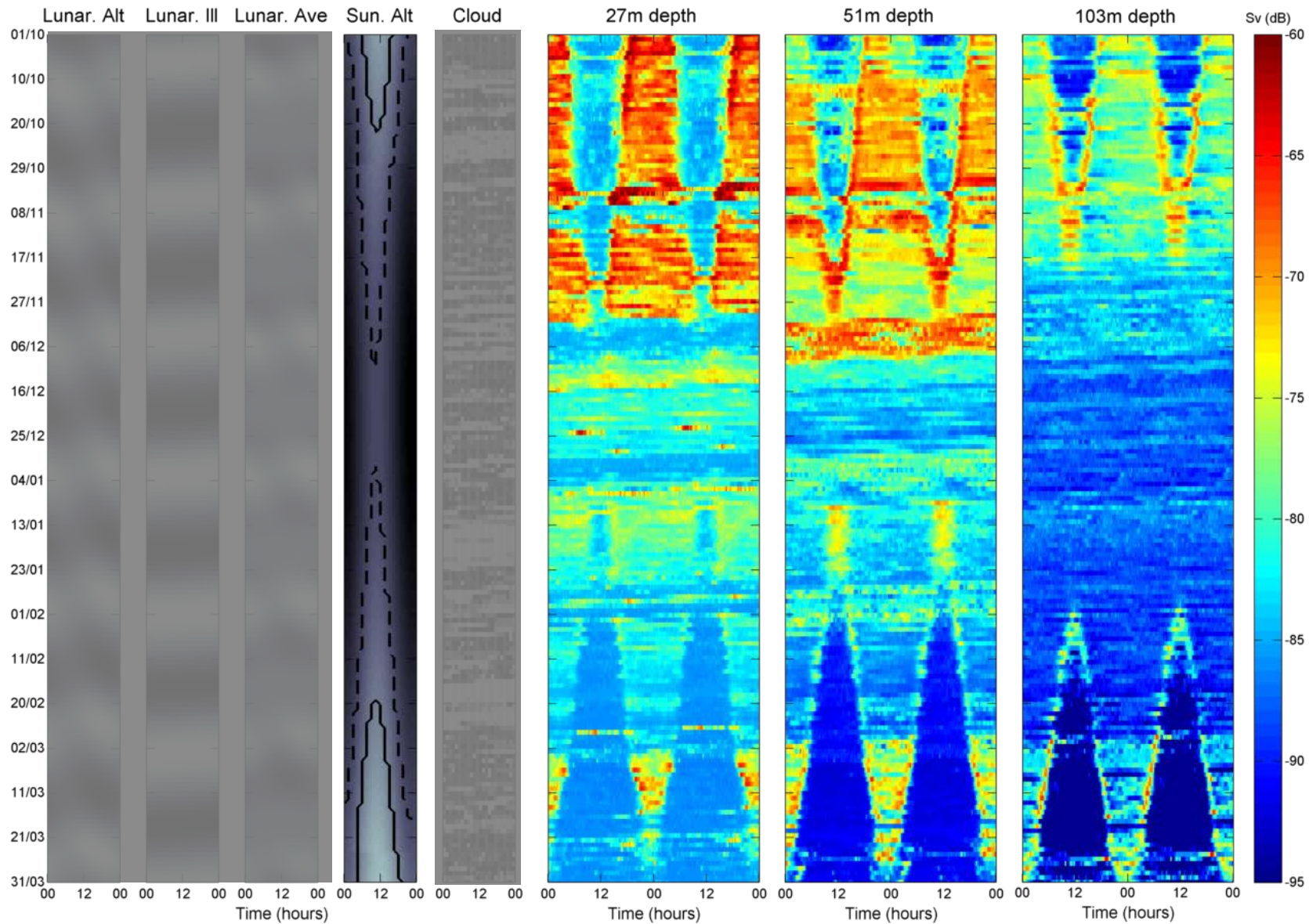


Etc

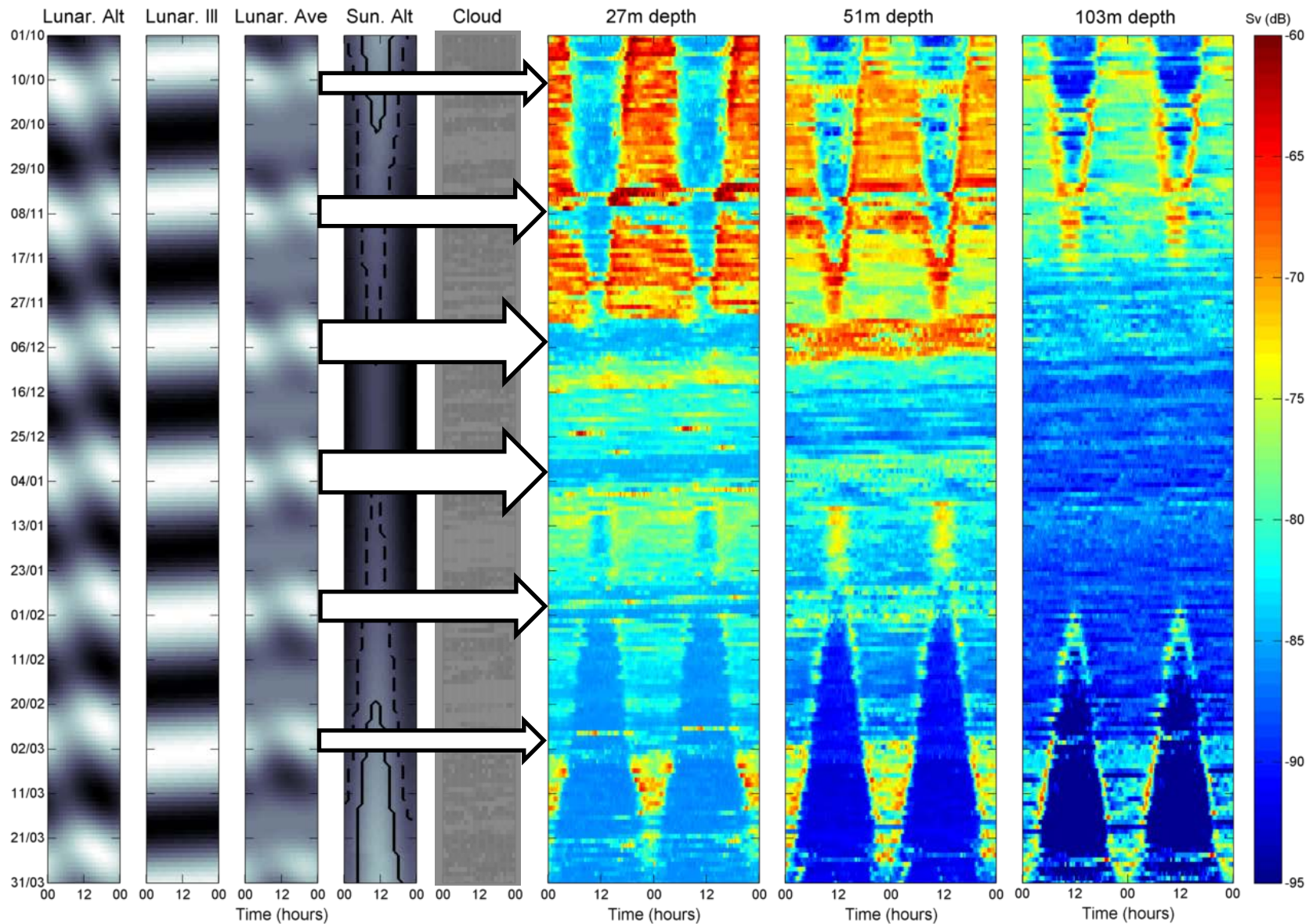


Circadian rhythms from flies to human
 Panda et al., Nature 417, 329-335

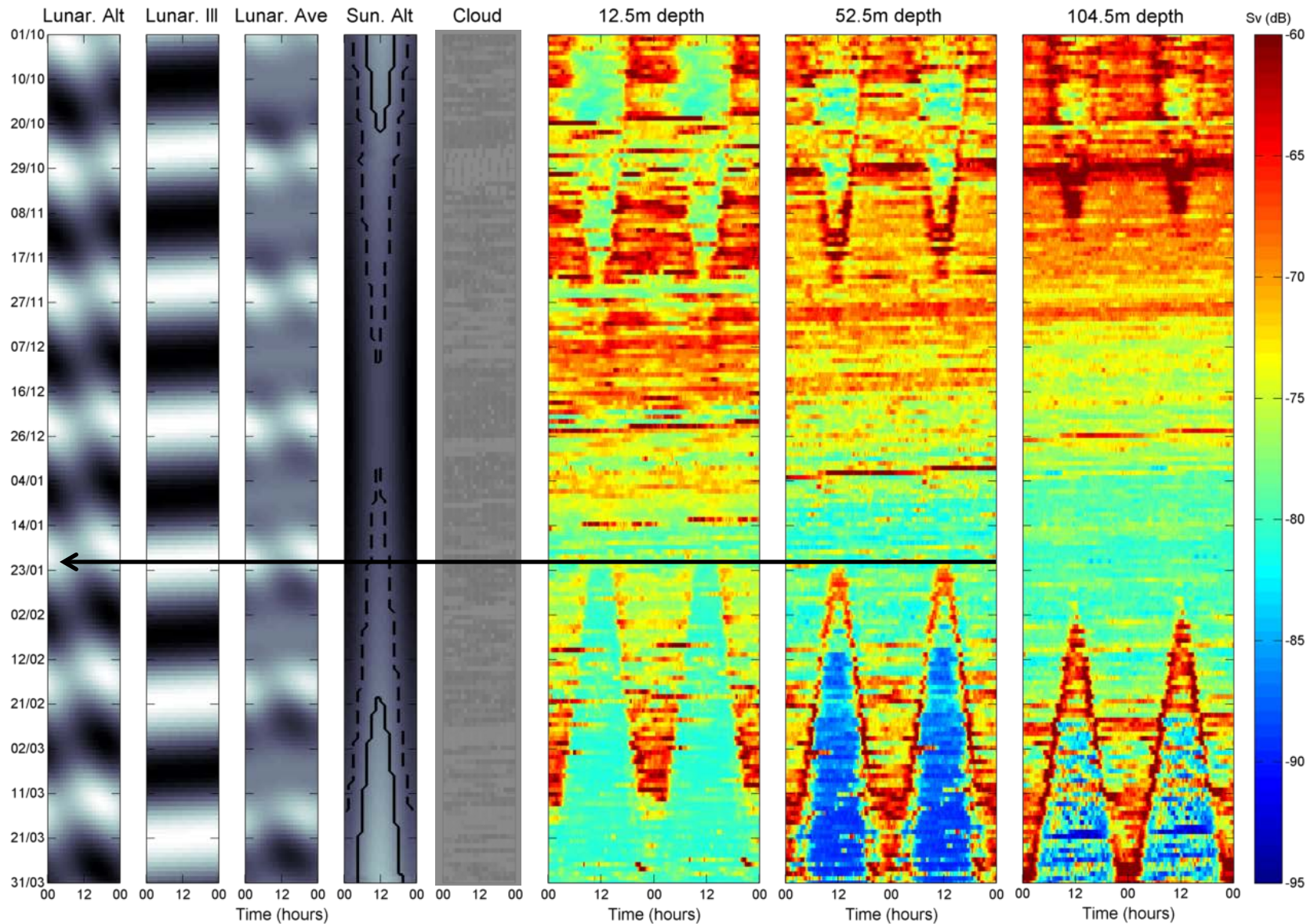
2006/07



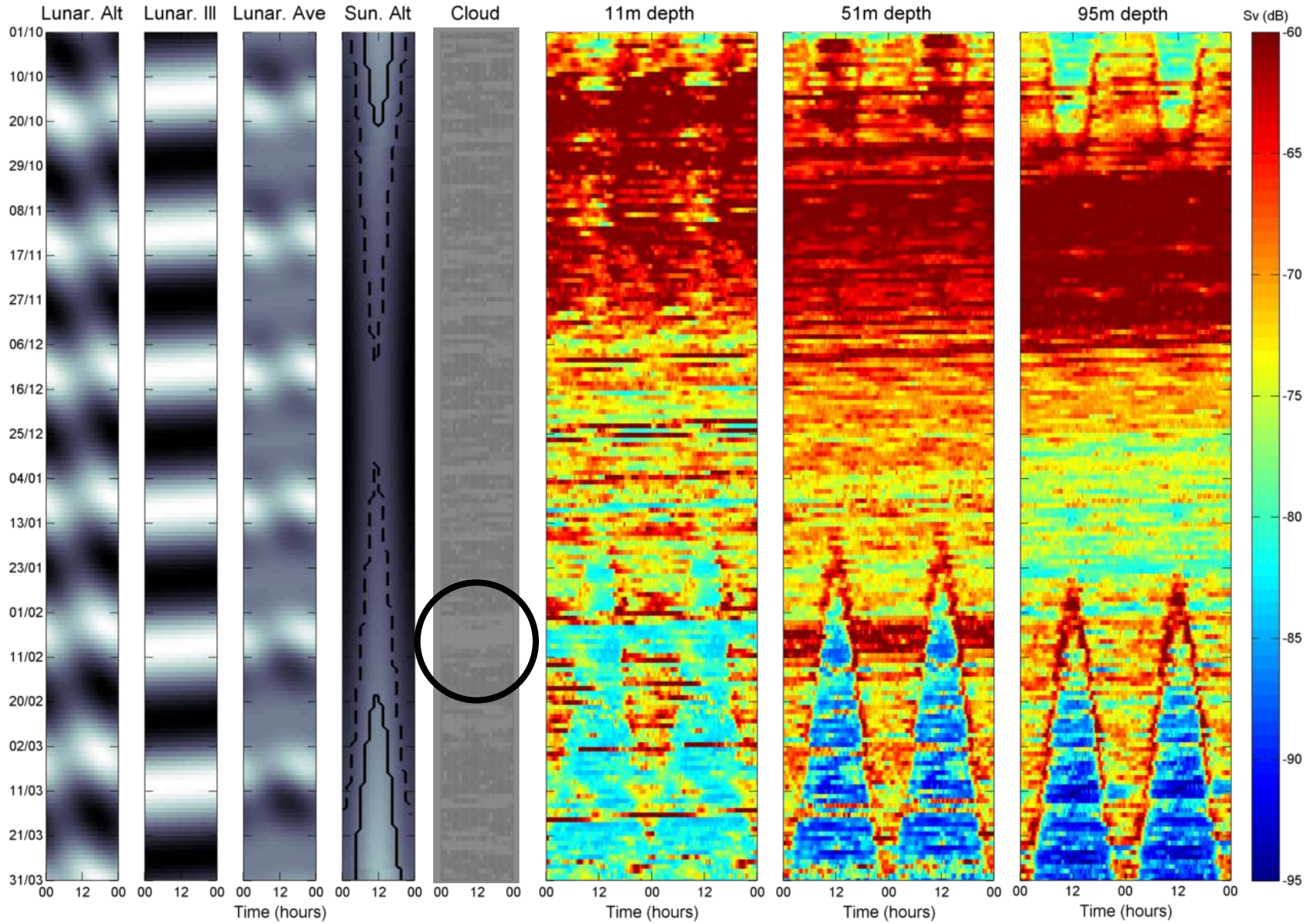
2006/07



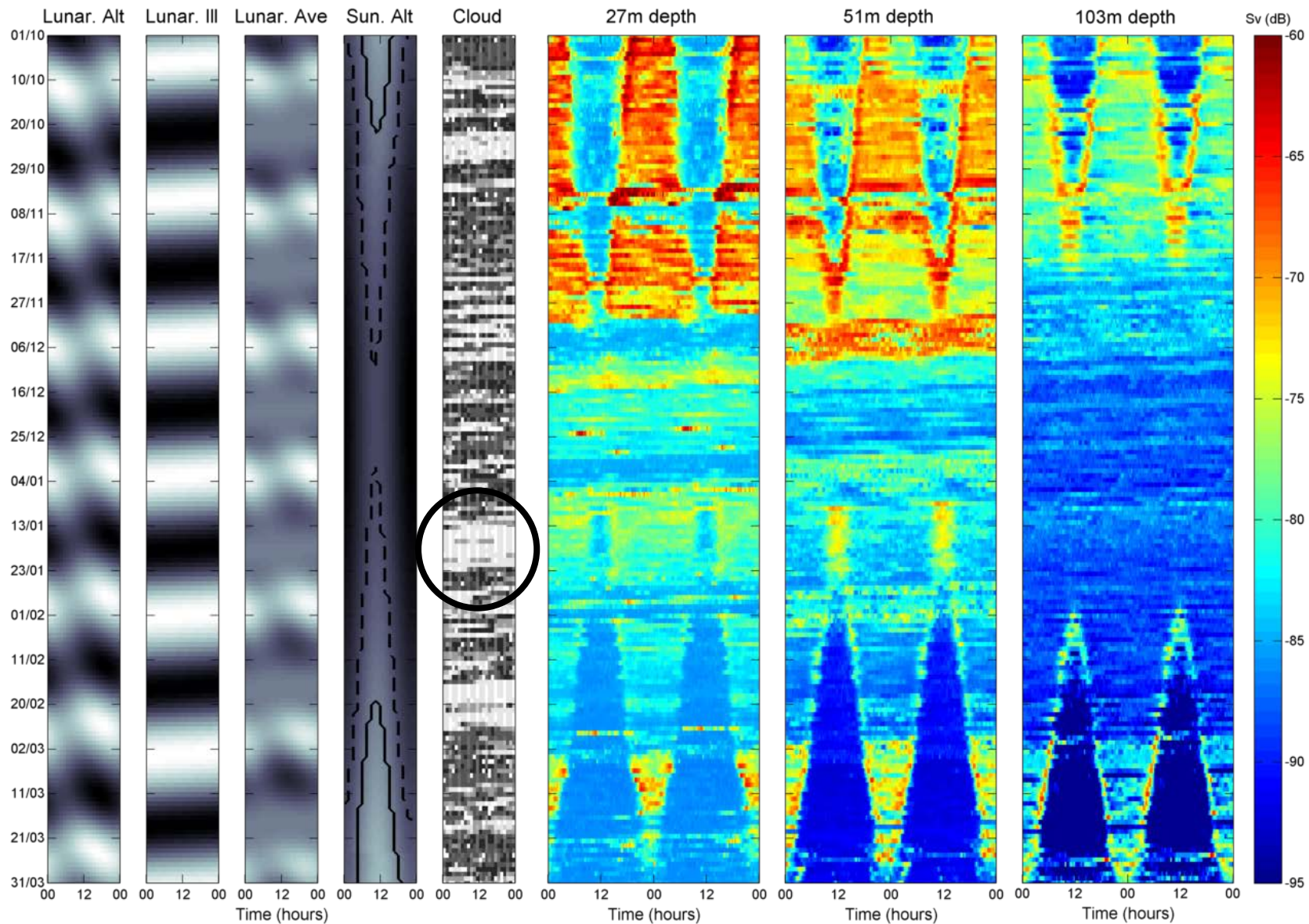
2007/08



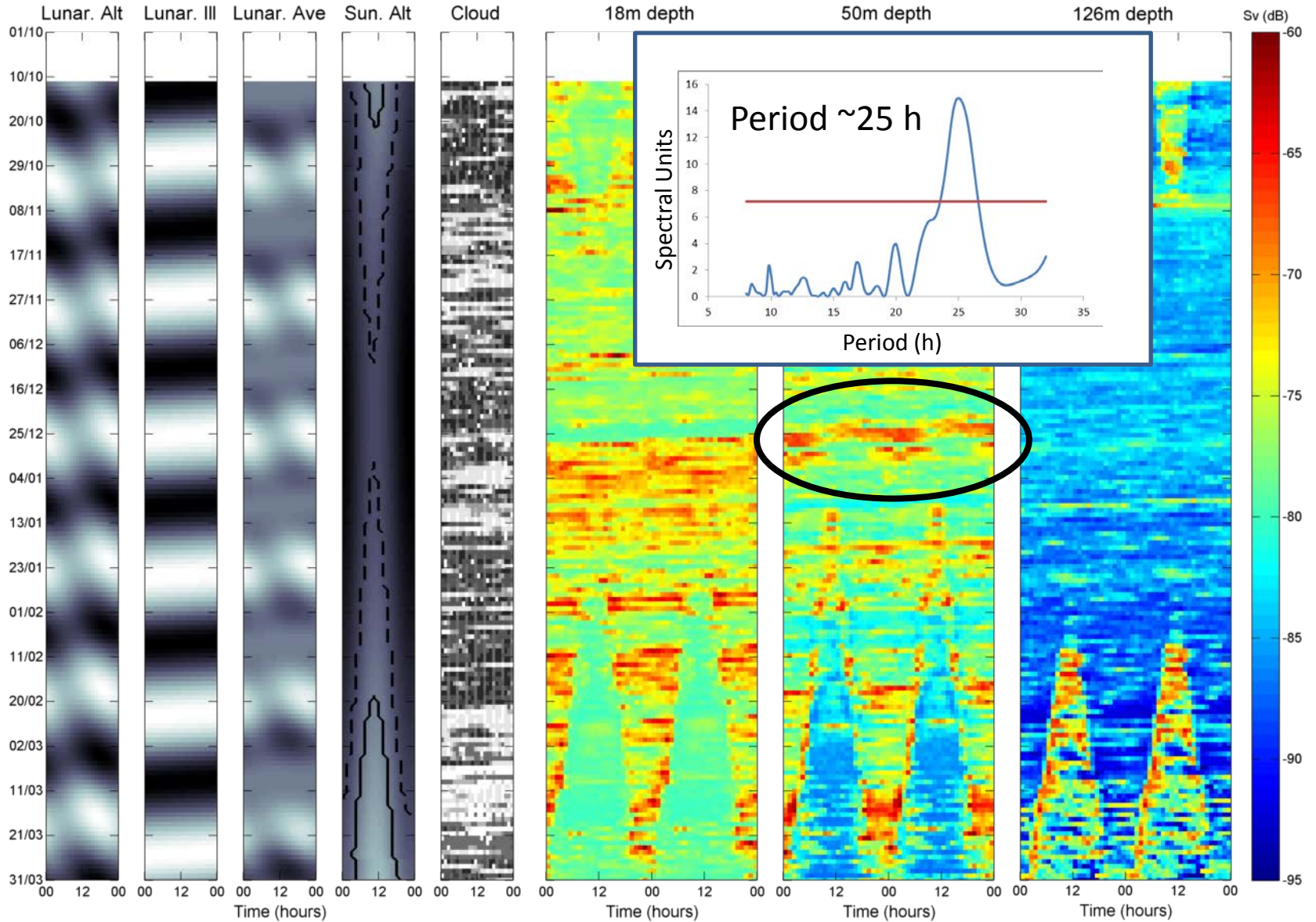
2008/09



2006/07



2004/05



Principles of Migration

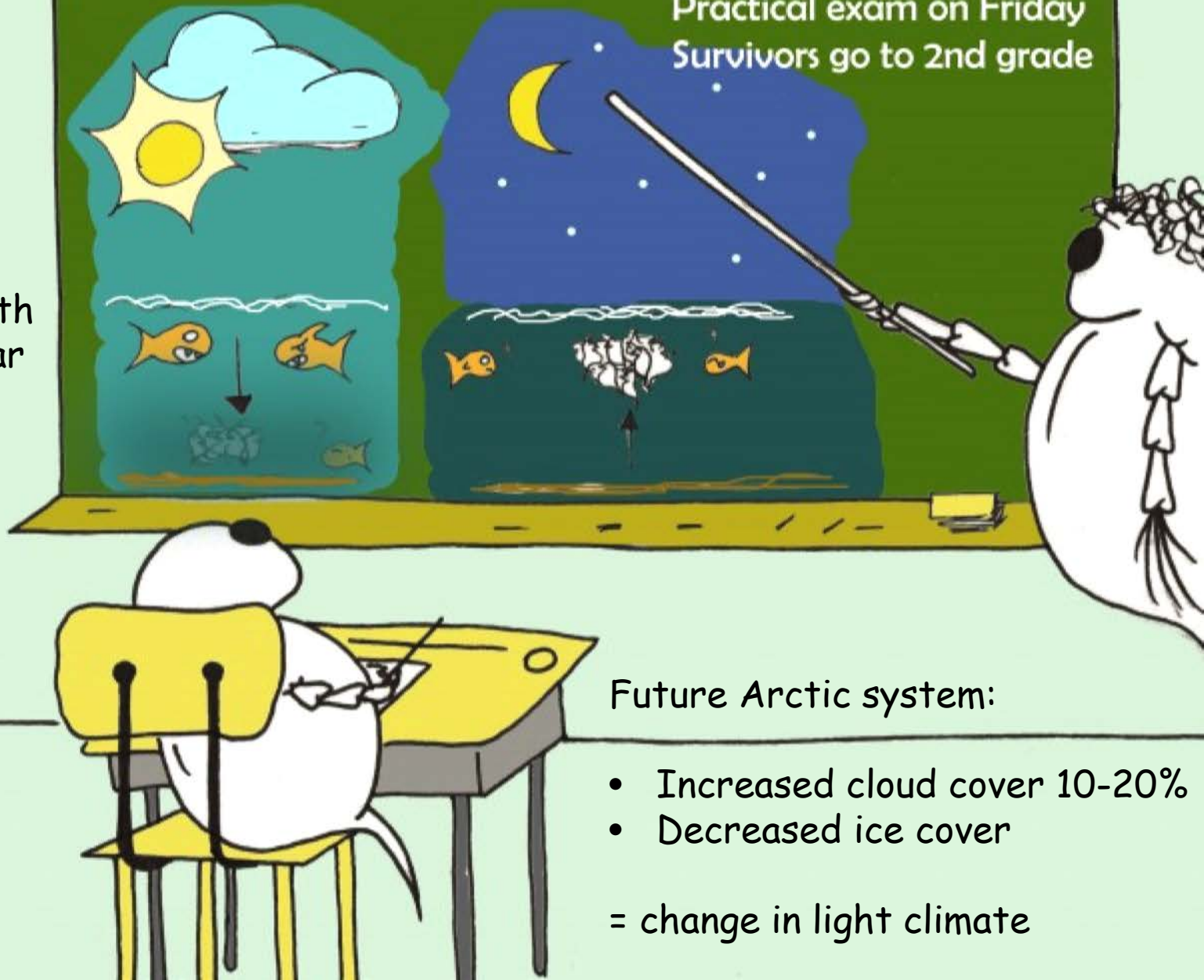
Practical exam on Friday
Survivors go to 2nd grade

Lunar-month
28 d VM

Lunar-month
masking of
solar DVM

Cloud cover
(un)masking both
solar DVM/lunar
VM

Lunar-day
24.8 h VM



Future Arctic system:

- Increased cloud cover 10-20%
- Decreased ice cover

= change in light climate

