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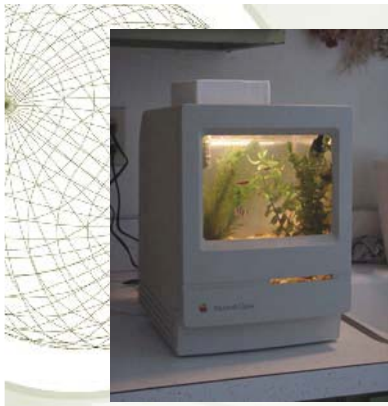


***UNIDATA*** 

From Wx Fax to Smart Phones  
Evolutions in Unidata Information Delivery

by  
Steven Businger  
University of Hawaii

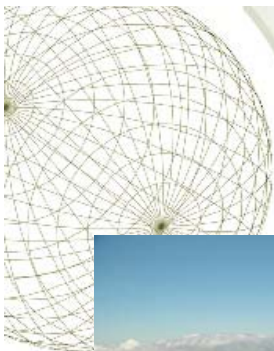
2



## *Outline of my Irreverent Reflections*

- ✦ Before Unidata - aka “the dark ages”
- ✦ Tuning in to your inner Zephyr: I hope it quits raining
- ✦ NextLab and VisionLab - Drinking from a Firehose
- ✦ IDD → New York, Chicago, L.A., Waimanalo?
- ✦ The Mauna Kea Weather Center
- ✦ Back to the Future

3



## *Seriously Thanks*



- ✦ My students and my research are deeply indebted to Unidata (and UCAR and NSF).
- ✦ Your data delivery and display services provide the foundation upon which my program is built.

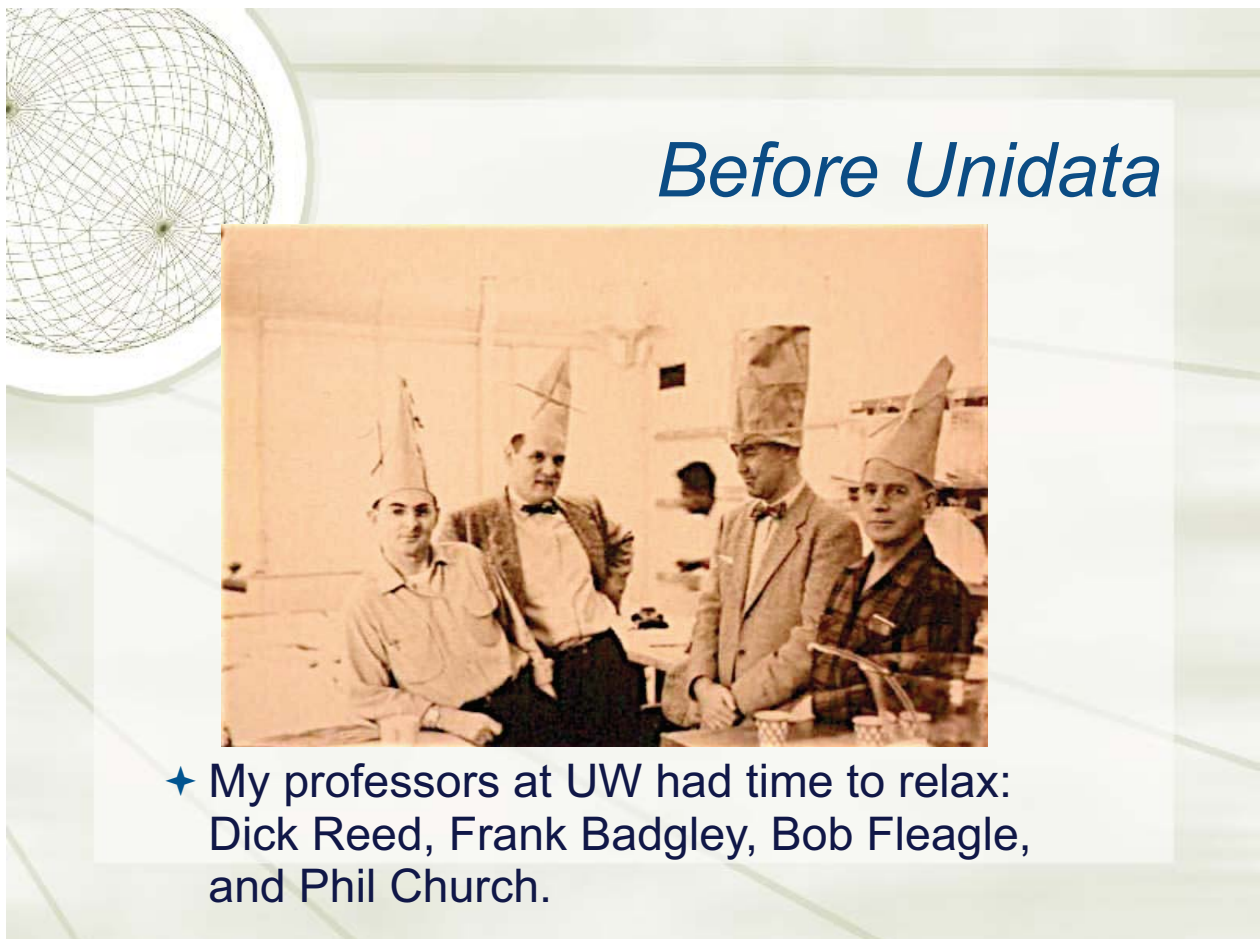
4



## *The Dark Ages before Unidata*

This is how we “Logged” in

5



## *Before Unidata*

- ✦ My professors at UW had time to relax: Dick Reed, Frank Badgley, Bob Fleagle, and Phil Church.

6



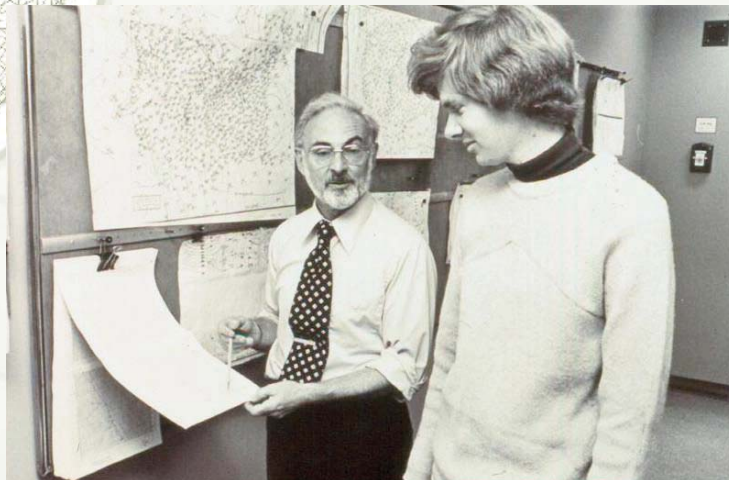
## *Before Unidata*



- ✦ That's because Lorrie Grider was working full time to hang fax maps and plot data on charts.
- ✦ Unidata has eliminated her job.

7

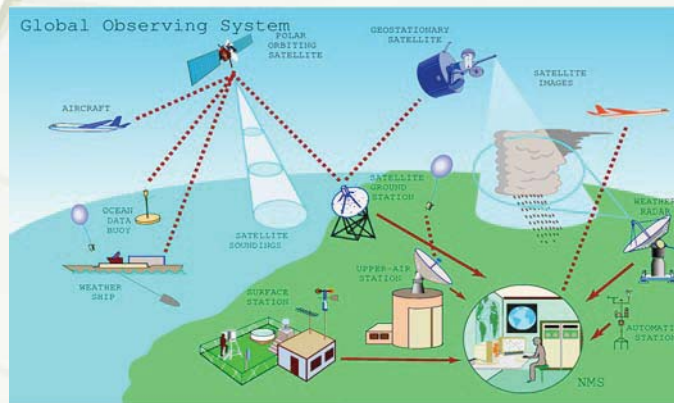
## *Before Unidata*



- ✦ Difax maps in the hall with Dick Reed and Wendel Nuss. Dick routinely out-forecast everyone in Seattle.
- ✦ Unidata ended his run.

8

# *A crises caused by Computers and Satellites*



- ★ The Unidata Program solved two problems:
  - ★ Access to and acquisition of atmospheric science data
  - ★ Access to interactive tools for conducting education and research with those data.

9

## *MEAS and NextLab*

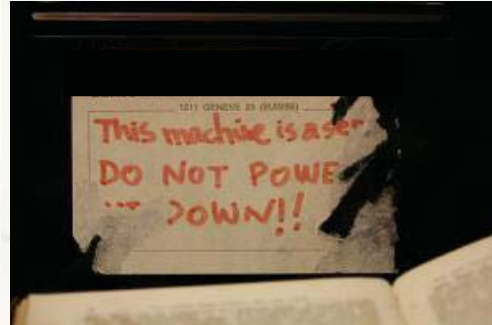


- ★ Note the satellite dish on the roof

10



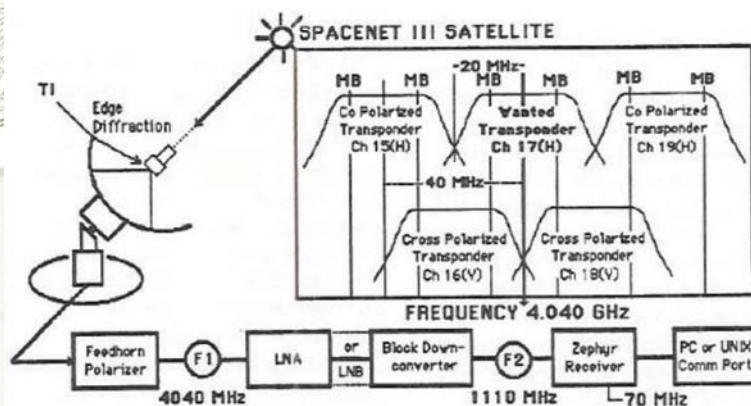
## NCSU Next Lab



- ✦ Warning this machine is a server, do not power down.
- ✦ NextLab was funded by the MRI program at NSF. I pitched NeXT computers.

11

## Tuning in to your Inner Zephyr



Jerry Watson

- ✦ “We suspect any person who takes on the job of (university Unidata) site manager does not have the foggiest notion of how the system works”  
Fred House, Drexel University

12

## *Unidata C-band*



✦ Satellite data delivery. Is it snowing again Tom?

13

## *MEAS and NextLab*

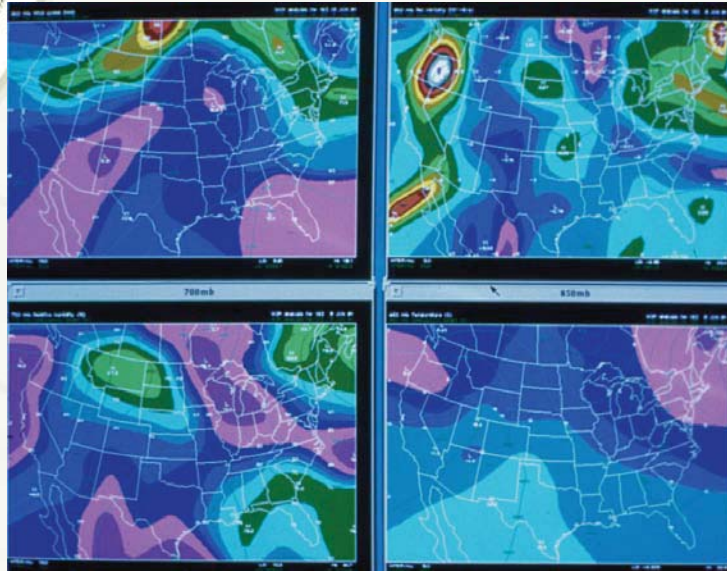


✦ Dr. Watson and Steven Chiswell  
with SUN II workstations

14



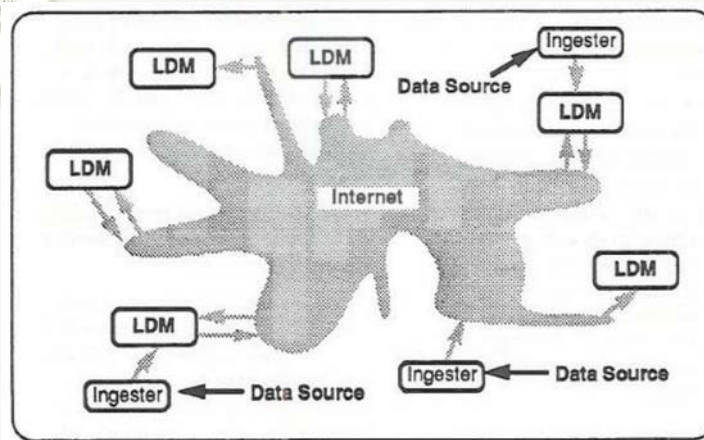
## *MEAS and NextLab*



✦ WXP display for 1 June 1991

15

## *IDD to Waimanalo?*



- ✦ Dave Fulker's clear vision of Internet data delivery.
- ✦ Skeptics argued that the Internet would fold once NSF pulled out.

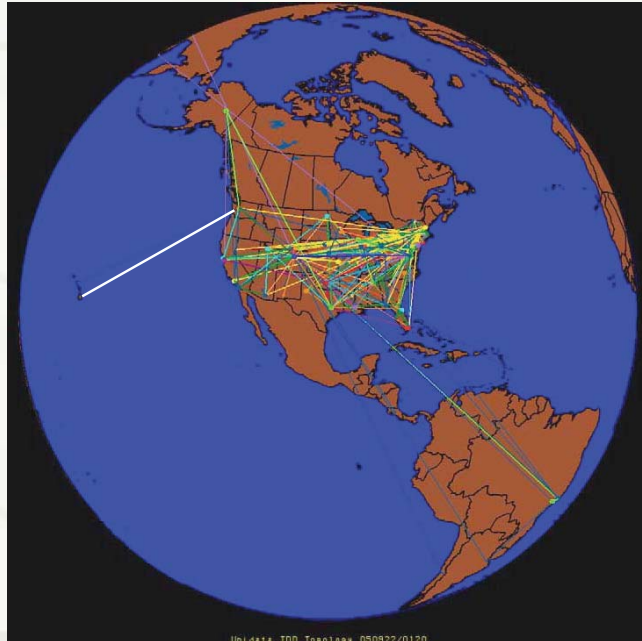
16



*the Internet hasn't folded yet*

**IDD**

✦ Even in Hilo!!



17

*University of Hawaii VisionLab*



✦ Focus on Tropical Meteorology

18

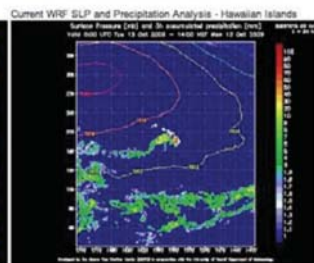
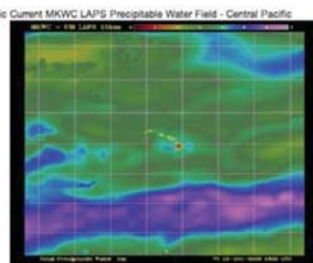
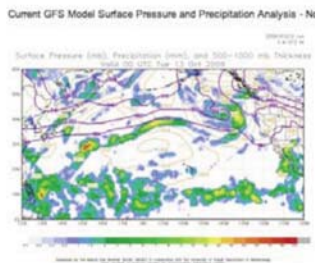
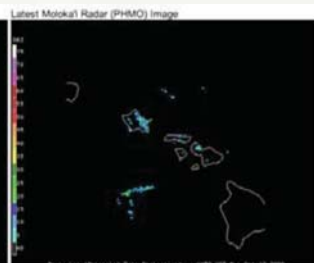
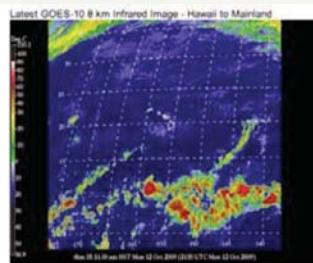
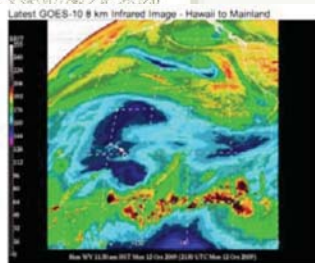
# University of Hawaii VisionLab



- ✦ Quad-core Mac Workstations
- ✦ can run IDV and Illustrator

19

# Mauna Kea Weather Center

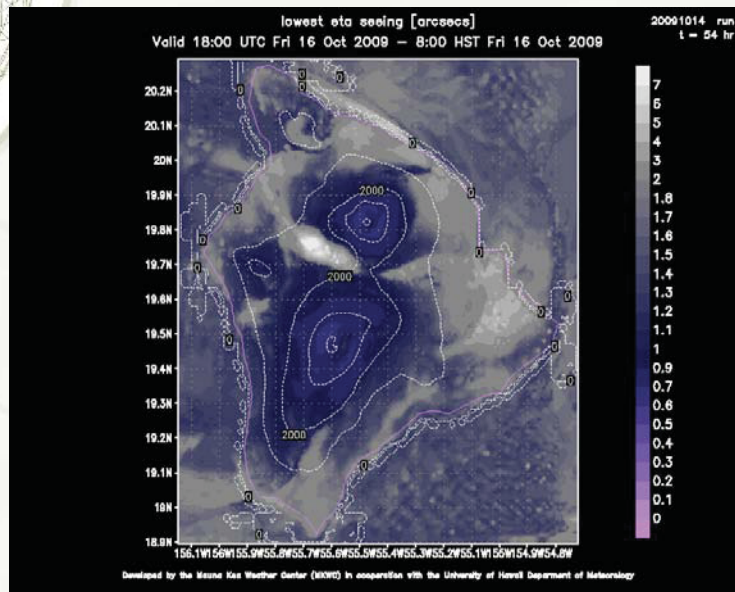


- ✦ Provides custom forecasts of  $C_n^2$  and “seeing”
- ✦ Smart-phone friendly weather server

20



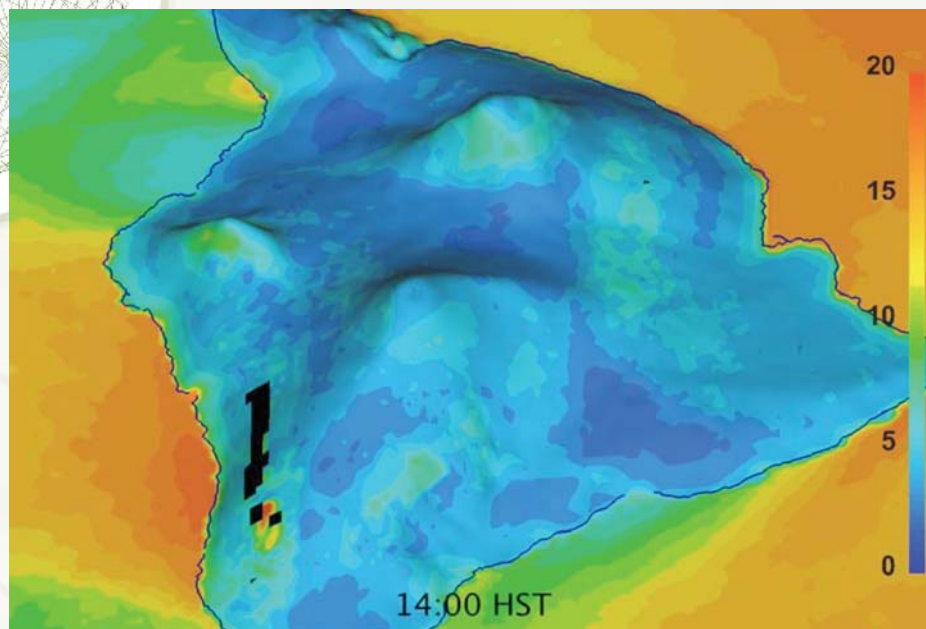
## Mauna Kea Weather Center



- ★ Provides custom forecasts of  $C_n^2$  and “seeing”

21

## Mauna Kea Weather Center

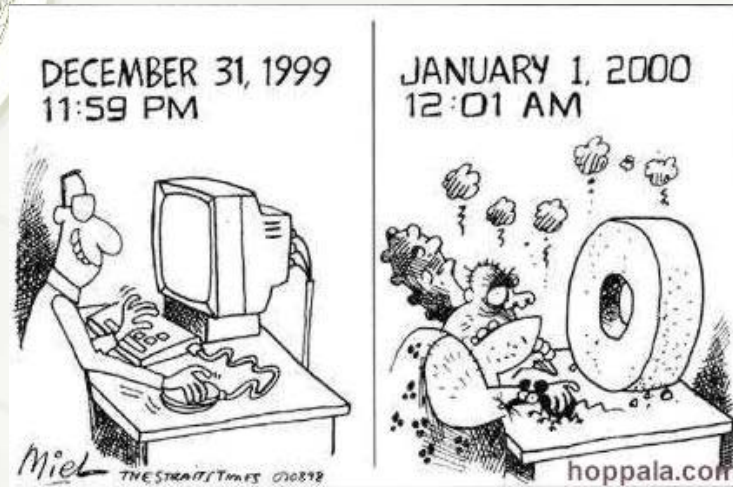


- ★ Provides custom forecasts of  $C_n^2$  and “seeing”

22



## UH Weather Server



At 00z YK2 the UH Weather Server turned into a pumpkin\*

\*perhaps the only one in the US, given all the reminders from UPC

23

## Back to the Future



- ✦ Unidata's challenge remains to gracefully replace "obsolete" tools
- ✦ with new tools that manage an ever increasing torrent of data,
- ✦ and to do all this with insufficient funds and continuing advice from absent minded professors

24



## *Back to the Future*

Unidata cyborg:

- ✦ can project any data or model output upon command.
- ✦ manages your weather derivatives portfolio
- ✦ books travel based on weather outlook
- ✦ Can laser holes in fog, while keeping your lunch cold



25

## *Thank you*



26

*Questions?*

