

# MET 4532

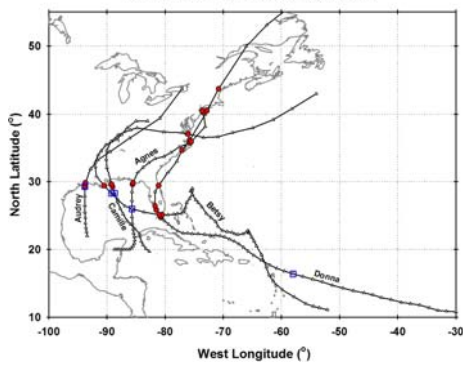
Lecture 28  
Camille, 1970 & Agnes,  
06 NOV 17



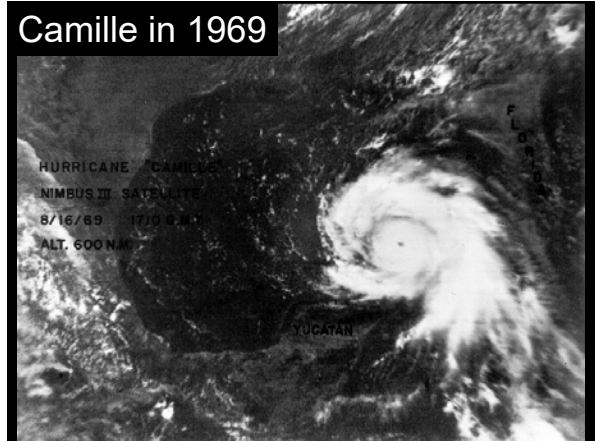
Gordon Dunn retired in 1967, to be succeeded by Bob Simpson, who was, in turn, succeeded by Neil Frank in 1973



Memorable Hurricanes 1957-1972



## Camille in 1969



## CAMILLE

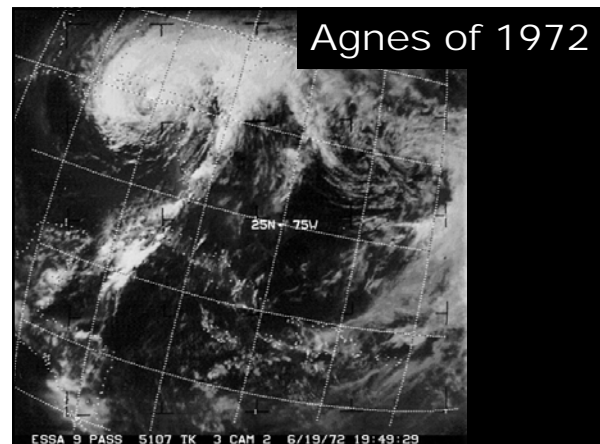
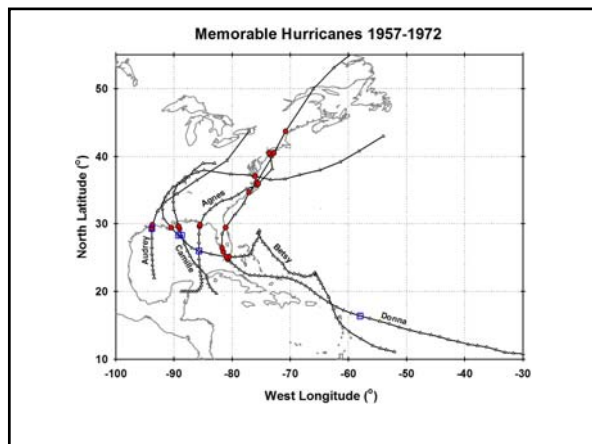


- Formed in the W Caribbean
- Tracked northward
- Intensified rapidly over the Northern Gulf (over the loop current?)
- Struck Mississippi coast as a CAT5
- Killed 259 (half by fresh-water flooding in VA)
- Damage \$1.42 B (1969 \$)
- Notorious Richelieu Manor Apartments Hurricane party is apparently a cyclostrophic legend and Mary Ann Gerlach was not the sole survivor of 21 revelers
- Only 8 residents (of 23 who stayed) perished, although the slab was washed clean

## 1969

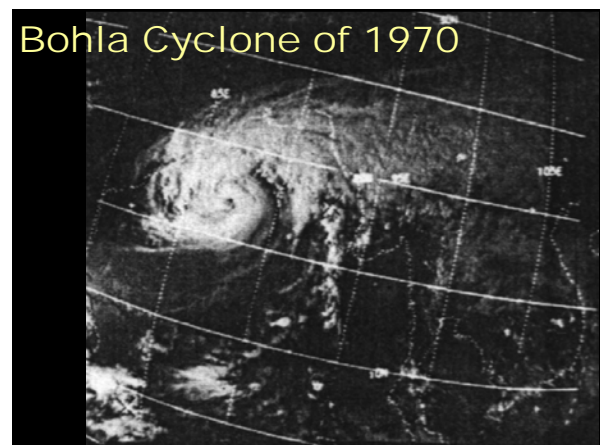
- Camille struck the Gulf Coast on 17 AUG 69, the last day of the Woodstock Festival
- Not everybody was having a summer of Sex, Drugs & Rock-n-Roll
- Vic Ooyama published the first successful numerical hurricane model two weeks before
- The Navy reconnaissance crews did not penetrate the storm because of safety-of-flight concerns
- Decision was made to recruit young officers from the training commands (with more education than judgment) to fly as meteorologists
- The rest, as the cliché goes, is history





### Agnes Impacts

- 14-25 June
- CAT 1 (or TS) throughout
- Extensive inland flooding from Florida to New England
- Killed 122, nearly all by drowning in fresh water
- Damage \$2.1B (1972 \$)
- Almost sank HEWs sailboat at its moorings
- Last Hurricane to kill more than 100 people until Katrina



### Bay of Bengal Cyclones

- Form as the Monsoon Trough advances north, peaking in May
- And as it retreats south, peaking in November
- Generally not as strong as hurricanes or typhoons that form in the open sea
- With tragic exceptions
- Densely populated Ganges Delta near sea level
- 5.5 m astronomical tide

### Cyclone of November 1970

- Political strife in East Pakistan already because of postponed elections
- Heavy rains and flooding previous summer
- TS moved across Malaysia and intensified over the Bay of Bengal
- Made landfall with winds > 60 m/s
- Killed 300,000-500,000
- Construction of elevated shelters was slow
- Subsequent cyclones
  - 1985—10,000 dead
  - 1991—138,000
  - Extensive shelter construction over next 6 years
  - 1997—100 killed

## CYCLONE SHELTER



## Summary

- Gordon Dunn retires in 1967; succeeded by Robert Simpson; then by Neil Frank in 1973
- Camille of 1969
  - Second recorded US CAT5
  - Killed 259, half in surge, half in flash floods inland
  - Same time as Debbie Seeding
- Agnes of 1973
  - Affected FL Panhandle and Mid-Atlantic States
  - Last storm before Katrina to kill > 100 in US (122)
- Bay of Bengal Cyclones
  - Two seasons peaking in May and November as ITC shifts
  - Weaker and fewer than hurricanes, but population is very vulnerable
- Bohla cyclone of 1970
  - Killed 300,000 to 500,000; led to partition of Pakistan
  - Construction of shelters since 1991 has limited mortality

Reminder: EXAM #2  
WEDNESDAY, 15 November