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ACTS MINI-WORKSHOP PASADENA, CA

June 14, 1993



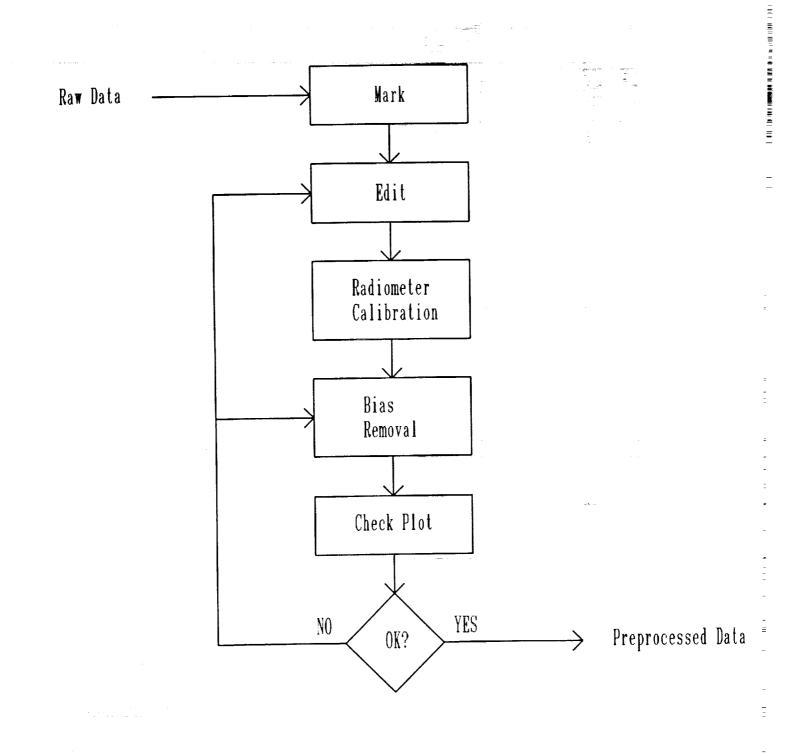
Satellite

Communications

Group

**VIRGINIA TECH** 

pre1.drw 05/17/93 Steps in ACTS Data Preprocessing



# MARK Step

- Automatic Procedure
- Functions
  - Fills holes in data
  - Transfers status information for beacon and radiometer signals
  - Checks beacon and radiometer data for large slope changes
  - Checks system voltages and temperatures to ensure that they're in range
- Types of Marks put on data
  - Beacon Acquisition Mode
  - Tracking Disabled
  - Bad DRX data
  - Low SNR on Beacon
  - Radiometer Calibration
  - Radiometer in Setup
  - Data Missing
  - Statistical Failure
  - Equipment Failure

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1 Non-clear air down-time. Potentially missed rain event data. 2 =

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#### EDIT Step

- User Controlled Procedure
- Functions
  - User checks "Low SNR," "Statistical Failure," and "Equipment Failure" status tags for possible bad data
  - User marks portions of data bad if necessary
  - All data is "tagged" good or bad upon exit from this step

# **RADIOMETER CALIBRATION Step**

- Automatic Procedure
- Functions
  - Convert radiometer voltages to sky temperature in Kelvin and then to ARD in dB
  - Hot and Cold Load calibrations applied
  - Noise Diode and Reference Load calibrations applied

#### **BIAS REMOVAL Step**

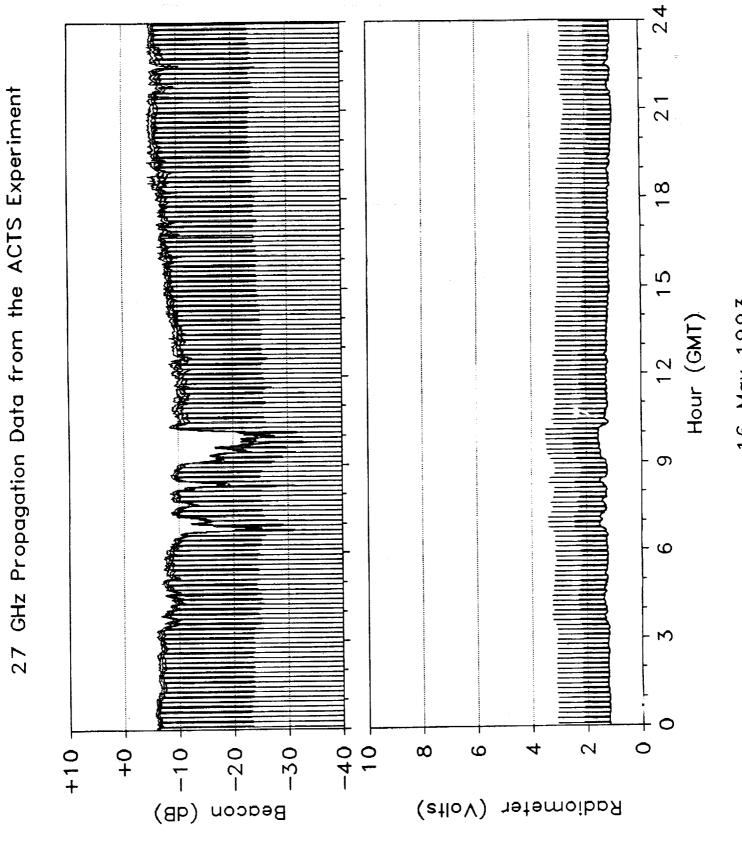
- User Controlled Procedure
- Function

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 • User removes signal fluctuations due to diurnal variation, front end heating, ice on the feed, etc.

# **CHECK PLOT Step**

- Automatic Procedure
- Functions
  - Generates a plot similar to the daily plot which displays AFS and ARD
  - All data "tagged" bad is excluded from plot
  - User checks this plot to ensure that all bad data and all signal fluctuations were removed in the EDIT and BIAS REMOVAL steps

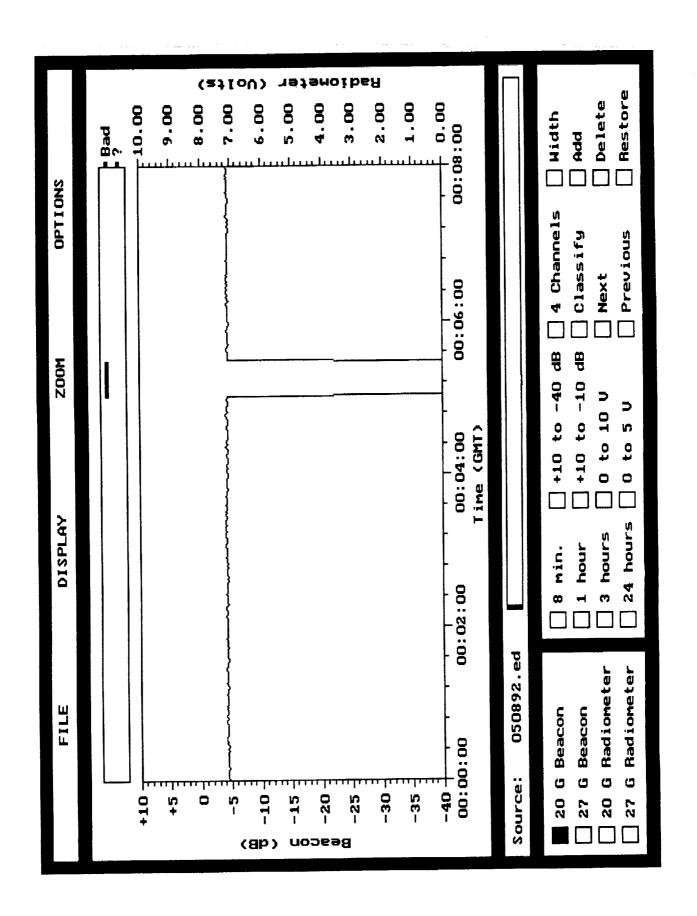


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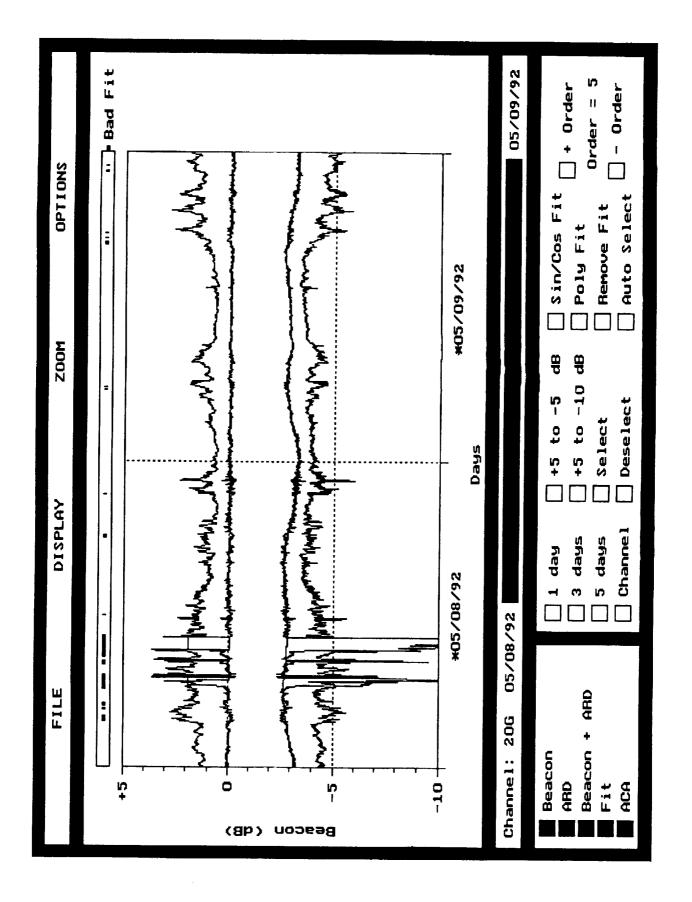
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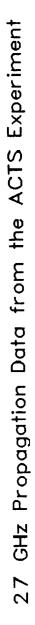
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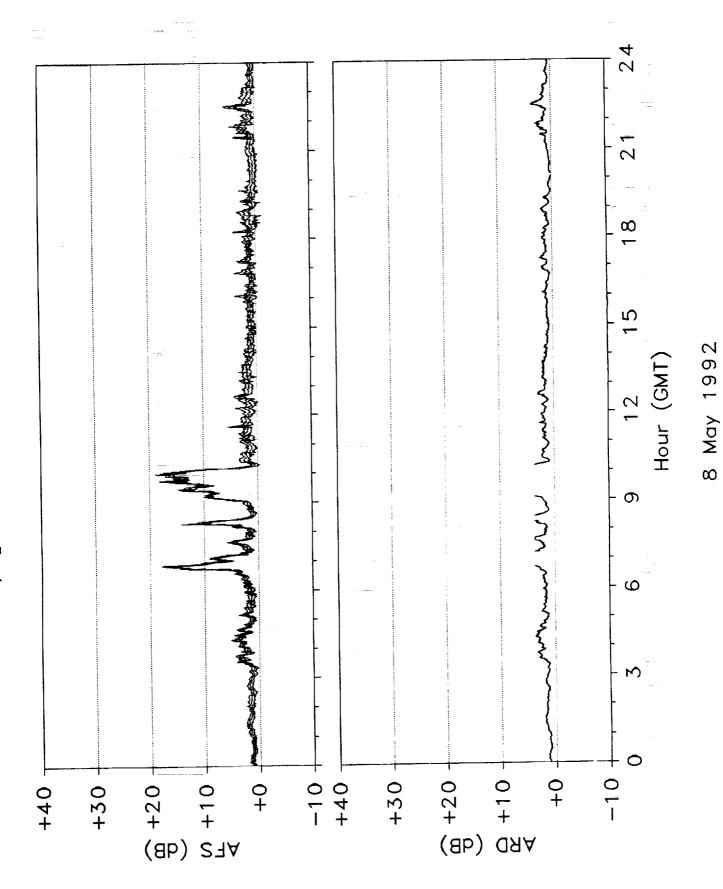




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