

CPWG Instruments Group Report

Chuck Long

With help from:

**Rich Coulter, Jim Mather,
Kevin Widener, Eugene Clothiaux,
Jimmy Voyles, Others...**

Moving forward

- **New 3-channel MWRs**
 - Purchase of 2 this FY, soliciting bids
 - Tentative plans for 2/yr until one for each CF and spares are purchased.
- **Photo-acoustic aerosol absorption instrument in process**
- **Upgrade for the BOM C-Pol radar has gone through**

On hold

- **SUNY Oxygen A-band instrument**
 - de-scoped by the ACRF Review Board
 - Concerns over having 3 separate "development" instrument systems come in all in the same year

MMCRs

- **Barrow antenna replaced in December**
- **Measuring circular cross-pol until early Feb when problem found (thanks Jay and Hans!)**
- **SGP antenna next for replacement**
- **SGP to be upgraded to PIRAQ in next few months.**

WACR

- **SGP WACR to become SWACR and eventually part of AMF2**
 - **WACR Scanner bid process is spinning up**
- **SGP WACR and AMF WACR inter-comparison last week**
- **AMF WACR missing about 8 dB of sensitivity**
- **AMF WACR antenna going to mfg for testing**

Radar Focus Group

- **Join us on our wiki!**
 - <http://wiki.arm.gov>
 - need a user/password but let Kevin know and we'll get you added
- **Meeting on Thursday**
 - 1pm - 3pm

Refurbishment of the MMCRs

- **Receiver upgrade?**
 - off table for this year
 - Triple \$\$\$
 - indications improvement wouldn't be as much as hoped
 - Future???

SGP 915 wind profilers

- **Reviewed by Sunset Committee**
- **Will be discussed at STEC meeting Thurs/Fri.**
- **Recommendation includes:**
 - collocating one at SGP CF next to MMCR
 - Deploy one in TWP

MPL Status

- **In general, working well.**
 - Pump diodes exceeding 1-yr expectancy
- **Problems:**
 - **Reset of Polarization Control (Operator problem on restart/reboot)**
 - **Automatic Restart after power failure (Software modification in “beta” testing)**
 - **Apparent Signal Sensitivity associated with anti-condensation air flow**
 - **Computer lock-up/crash (21 day period): may have been fixed with update of drivers**

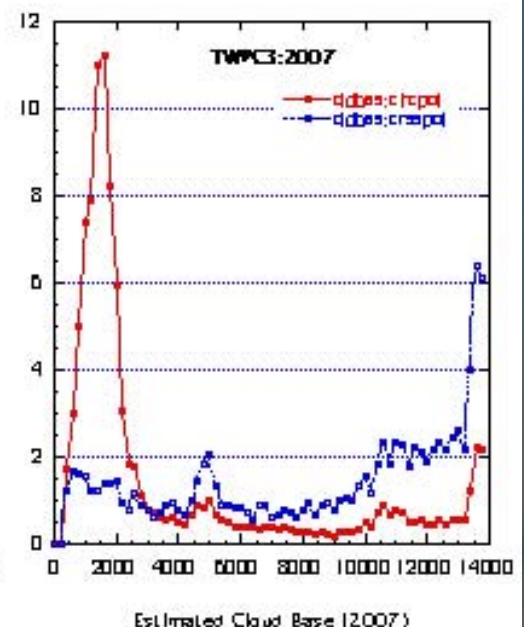
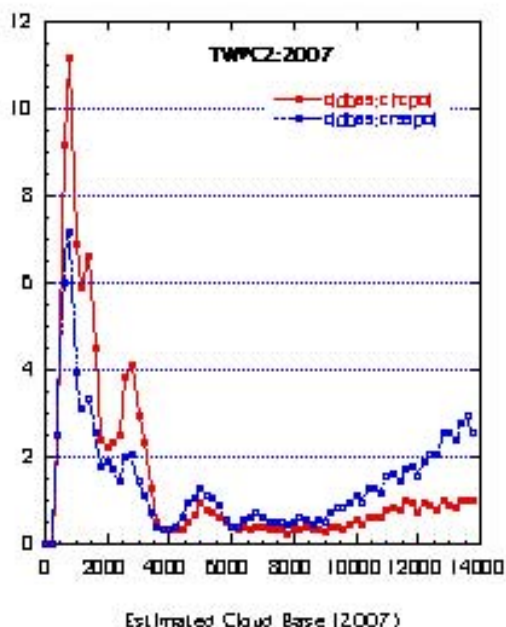
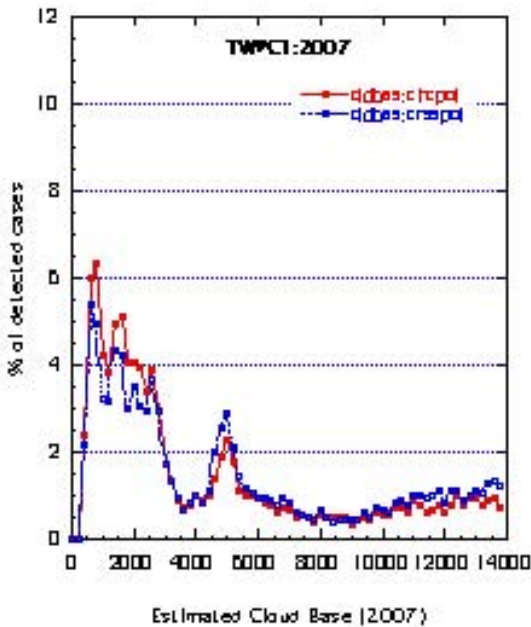
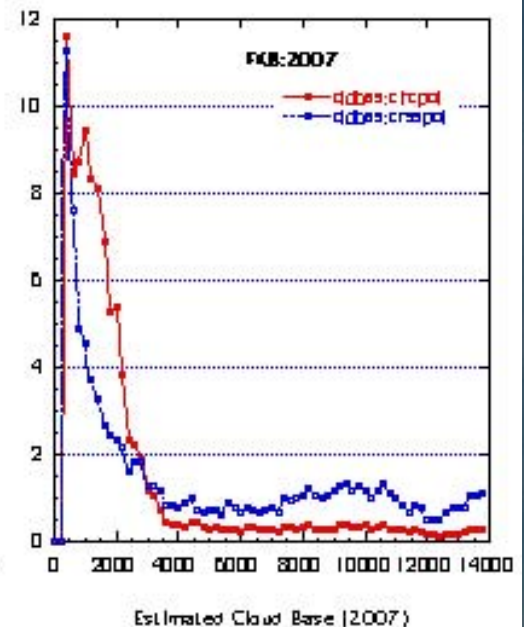
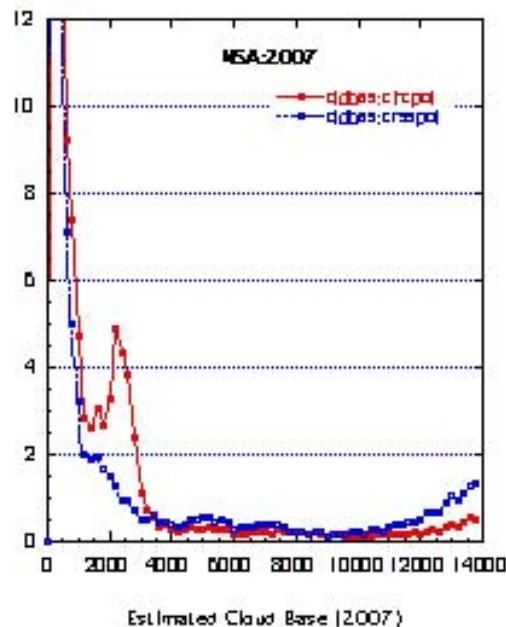
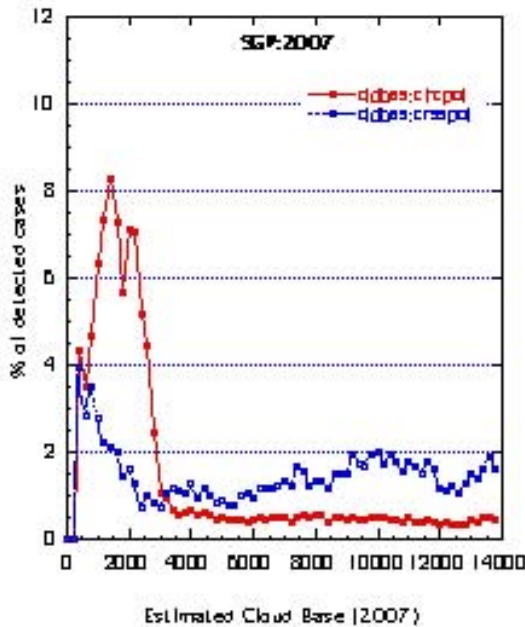
(Courtesy Rich Coulter and Tim Martin)

Current Efforts

- **Work with Sigma Space to incorporate automatic restart in software - an ECO is in place for this and version is operating on spare system (at CF)**
- **Look at new methods for preventing condensation on window, including double pane (\$\$, energy loss) and heat tape (thermal gradients?)**
- **Work with Sigma Space to incorporate rapid switching between polarization states and simpler data handling strategy**

(Courtesy Rich Coulter and Tim Martin)

Cloud Base Statistics (circularly- and cross-polarized)



(Courtesy Rich Coulter and Tim Martin)

IR Sky Imagery

- **IOP Aug. 28 – Oct. 5, 2007 at SGP**
 - **Compare measurements of cloud fraction from four different types of commercially-available infrared instruments**



IOP Instruments

Atmos Cloud Infrared Radiometer (CIR-4)



Heitronics Nubiscope



Yankee Total Sky Imager

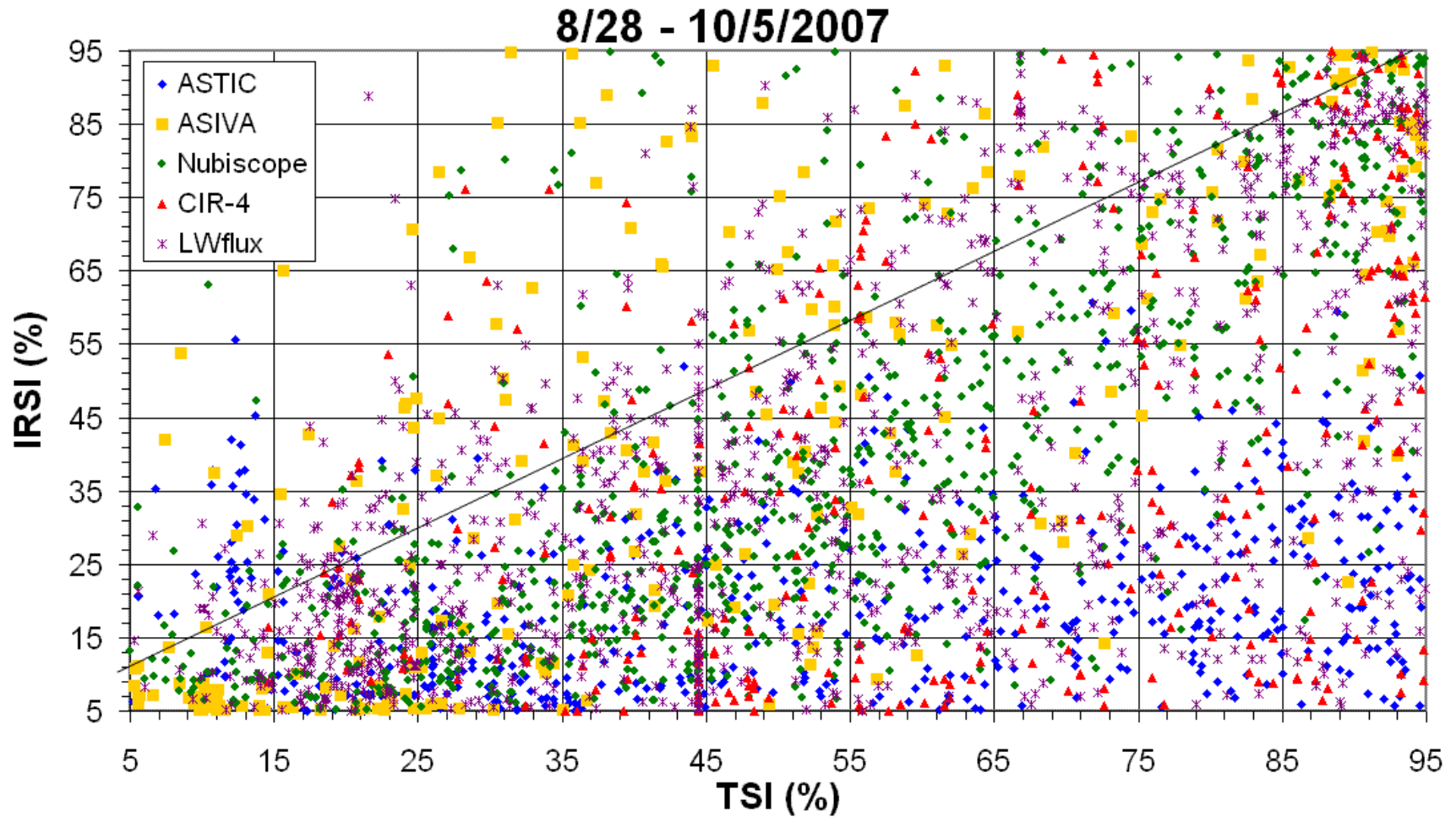


Solmirus All Sky Infrared Visible Analyzer (ASIVA)



Blue Sky Imaging All Sky Thermal Infrared Camera (ASTIC)

Results: Mixed



A dark blue sky with a large, fluffy white cloud in the lower half. The text "Discussion?" is centered in the upper half of the image.

Discussion?